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MARYLAND
TRY REFERENCE BOOK

17th Annual Edition

1955

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MARYLAND
TRY REFERENCE BOOK

17th Annual
Edition

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1955
MARYLAND POULTRY REFERENCE BOOK

yearbook.

Published by

THE MARYLAND STATE POULTRY COUNCIL, INC.

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MARYLAND'S DECLINING POULTRY INDUSTRY

Maryland's poultry production is, and has been for several years, the largest single source of farm cash income.

In spite of increased consumption of eggs in Maryland, the production of eggs has been declining both numerically and percentage-wise compared to the United States.

Also, in spite of the increased consumption of poultry meat in Maryland, the production of broilers on the Delmarva Peninsula has been declining both numerically and percentage-wise compared to the United States but holding approximately numerically stable in Maryland.

The following poultry leaders in Maryland were asked to comment upon this situation and suggest procedures for reversing this trend:

HAROLD P. KLAHOLD, President of the Maryland State Poultry Council, Inc., First Vice President of NEPPCO. A broiler grower.

JAMES A. GWIN, Director of the Extension Service, University of Maryland.

LELAND J. GRAHAM, Vice President of Maryland State Poultry Council, Inc., Manager of Southern States Marketing Coop., the largest egg marketing organization in Maryland, and member of the Shell Egg Advisory Commission, U. S. Department of Agriculture.

DR. MORLEY A. JULL, Head of Poultry Department, University of Maryland.

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HAROLD P. KLAHOLD

President Maryland State Poultry Council, Inc.

As President of the Council I am very much aware of the decrease in the production of Broilers in the state, both percentage wise and numerically. This is a problem not only in this state but also in Delaware.

This trend has come about for the following reasons. We have a somewhat higher production cost here mainly due to the fact that we have a colder climate than some competing areas. Housing is more expensive and in cold weather our fuel costs are higher. The above cost in some measure is overcome by somewhat lower transportation costs to market. We here in Maryland have operated with private Capital and have, as a result, been very cautious. As we have cut back production in order to stabilize the market, other areas using in some cases large loans from the government, which, in effect, are our tax dollars, have stepped in and greatly expanded their production.

You ask what are we, the Council, doing about this. Through our representation on the Board of Directors of the Northeastern Poultry Producers' Council we are getting the support of all the Northeastern States on a national level on all matters that affect our costs or our markets. In the State we were successful in having the Broiler Property Tax removed. This was done through the efforts of the Council and was not accomplished by the so-called politicians. The removal of this tax has placed us in a more competitive position.

To advertise our industry the Council sponsored and was financially responsible for the Maryland Poultry Day at College Park. Over 1,000 people attended this all-day meeting and learned many things which, it carried home to their farms, should help them to produce more economically. They heard many nationally known speakers. The leaders of our State and Federal Governments were there. These men, while we were grateful to have them speak, we were also very interested in them getting a closer insight to our many problems and also finding out the importance of the poultry industry to the State of Maryland.

At the present time representatives of the various segments of the industry are meeting with Senator Butler to see what can be done about our declining production. Only last week I spent an entire afternoon with the Senator. We went out to broiler farms and to dressing plants trying to find some solution to the problems we are facing.

Unfortunately there is not one simple solution to our problem. We are working on them and will continue to work on the problems facing the poultry industry. I urge that each and every one of you give all the support possible to the organizations which are working so hard for you.

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JAMES M. GWIN

Director of the Extension Service

University of Maryland

Commercial broilers account for almost one-fourth of Maryland's farm income. This is big business, involving a gross cash income of over fifty million dollars in 1953. It is important to Maryland to have this great industry grow and prosper. Every reasonable effort should be made on the part of all interests to accomplish this end.

The problem of rendering proper support is at best a difficult one for it involves many factors, including some which are totally beyond the control of local effort. The first important problem concerned with helping the industry is to know what to do and, secondly, to know how to do it in a way that will produce the best results. Those of us who have worked closely with the commercial broiler industry of Maryland will agree quite unanimously that Maryland's part in this industry is closely linked with that of the other states in the Delmarva area. Thus, best results should come from having all Delmarva broiler interests working toward the improvement of those phases of the industry in which we have the greatest natural advantage.

It seems to me that our greatest advantage is in the freshly killed and chilled phase of the dressed broiler business. Delmarva's location in relation to large volume consuming areas gives it a distinct advantage in the marketing of freshly killed and chilled broilers. True, a part of this advantage is overcome by lower feed and labor costs in other areas but apparently not enough to offset the advantage we get from our good consumer market location. There has always been doubt in my mind as to whether we could compete successfully with some other areas in the eviscerated quick frozen field alone. I think our advantage lies in the fact that when we combined the quick frozen operation with our chilled volume we have a very good chance of reducing unit cost to the point where the total situation is somewhat to our advantage and, thus, we are in position to compete in both fields and increase demand for Delmarva-produced broilers.

The competitive situation described above is, at best, one that leaves little margin of advantage. It, therefore, places us in a position where two factors play an important part in the direction we will move in the future.

The first factor is consumer demand for drawn freshly killed and chilled broilers as opposed to the demand for the eviscerated quickly frozen broilers. The great increase in broiler consumption over the past decade has been accounted for by the increased use of both drawn chilled and eviscerated birds. Both methods are fine and I hope they both continue to increase. From Maryland's point of view, however, I am most concerned with continued use of freshly killed and chilled broilers which are sold as cut-up or eviscerated whole birds. There is at present a large demand for this type of poultry and I hope it continues for it certainly appears to offer us the greatest advantage in the market place.

The second factor is efficiency of production. We must produce broilers more cheaply than we have in the past if we want to keep competitive with other areas. There are hundreds of angles related to this objective. Research is a very important one and it must cover every phase of production including the development of more efficient feeds; better control of disease; and birds with genetic ability to develop faster and heavier. We should have more eggs per breeder with better hatchability and lower hatchery costs. We are greatly in need of better technological developments that effect reductions in chick costs, production

(Continued on Page 11)

WORDS AND DEEDS

Progress has added new words to the poultry industry's vocabulary: *pan-ready . . . ready-to-cook . . . oven-ready.*

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costs, as well as processing and distribution costs.

Maryland's broiler industry is in a far more competitive position than it was in the immediate post-war period. Its total volume suffered a slight setback in 1952 but its 1953 production was the highest on record. From all indications the 1954 volume will show a small decrease and the last part of 1954 may not be a particularly favorable period for producers. But, fluctuation and short-time low price periods are minor considerations compared to the fact that this great industry continues to hold its basic volume and continues to offer great possibility in the years ahead.

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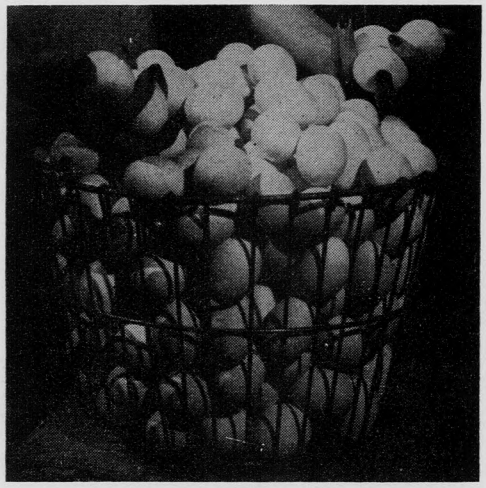

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LELAND J. GRAHAM

Vice-President Maryland State Poultry Council

For a number of years the decline in egg production for table purposes, in Maryland, has been a cause of real concern among the members of the Extension Service and Poultry Department of the State University.

During this same period there has been almost sensational increases in the production of eggs in Pennsylvania and New Jersey.

Inasmuch as the population in the Maryland and Washington, D. C. area has increased at a rate considerably faster than the United States as a whole, the decline in egg production has caused a substantial increase in the deficit which already existed. This deficit in 1940 amounted to 566,000 cases for Maryland, and 598,000 cases for the District of Columbia. By 1952 it had increased to 1,494,000 for Maryland and 900,000 for D. C.

This brings up the question as to why, in an area where eggs must be imported and where the market therefore must be higher than surrounding markets in order to encourage this importation, the farmers have not seen fit to increase their poultry flocks.

As I see it, there are several reasons for this. Since there has been a general trend away from the small flock toward the commercial flock, there have been more farmers and suburbanites who have ceased raising flocks than those who have increased them substantially. This not only includes the number of individuals but the number of hens kept on the farms. For instance, from April 1, 1940, to April 1, 1950, over 6,000 farmers in Maryland, which had 200 chickens or less, ceased keeping chickens while only 129 farmers increased the number of chickens they were keeping. The reason for this decline was that good jobs were plentiful, and many who had kept chickens as a sideline did not want to be bothered with them, especially on week-ends and holidays.

Furthermore, some of the farm enterprises, especially dairying, have been far more lucrative than egg production, considering that many of them have been operated under a system of government support which more or less guaranteed the farmer against loss.

Then, too, there has been the question of a climatic condition where, during the hot summer months, the quality of eggs produced on many poultry farms was not as high as that produced in many of the northern states which had cooler nights and generally lower mean temperatures. This factor which may have been the most important has possibly been the least tangible of all. While the eggs have been of good quality, and generally satisfactory under practically all conditions, nevertheless, in periods of surplus, when buyers naturally tend to be extremely critical, the quality, when compared with eggs from northern areas, has been found inferior and the choice has often been made favoring the eggs from the cooler sections. This then in turn has caused a discounting of the price in order to keep the eggs moving through marketing channels. It must be remembered that eggs of this type could not be held for any length of time without losing an appreciable amount of quality.

The solution to the problem, as we see it, is as follows: With good markets the Maryland poultryman should be in a position to compete successfully with the poultrymen in Pennsylvania and New Jersey providing they overcome the handicaps and factors which, in the past, seem to have kept him from realizing the most profit from his poultry flock.

He should keep enough birds so that his main interest will be in poultry and he will make every effort to produce fine quality eggs. He must have enough layers so that he can use as much la-

(Continued on Page 15)

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bor saving equipment as possible. It would seem that under present conditions, with various helps that are available, 4,000 layers would be the least that he could economically take care of.

The greatest detriment to egg quality is improper cooling and holding of the eggs. It has become practically unanimous thinking among the Extension Service and the Poultry Department of the College and others closely associated with the industry that Maryland temperatures are too high during the summer months for natural cooling and holding of eggs.

It would seem essential therefore, that some form of artificial cooling, such as a room cooler or refrigerating unit, should be used to cool the egg room so that the animal heat can be removed from the eggs as quickly as possible and the eggs be held at cool temperatures.

During hot, dry spells, moisture can be added to the air either by a humidifier or by keeping the walls or floor wet, or both.

We are assuming, that as far as purchase of chix, feeding, and management are concerned the poultrymen in Maryland are using as good judgment as those in other sections.

In conclusion, we wish to re-emphasize the fact, that for some time to come the markets in Maryland and the District of Columbia will probably be at least as good as or better than those in the northern sections of the country.

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MORLEY A. JULL

Head of Poultry Department, University of Maryland

Relatively low broiler prices for rather lengthy periods and the damage resulting from Hurricane Hazel have tended to discourage many Maryland broiler producers. They are wondering "What of the Future?"

Low prices not only affect the broiler producers but also the hatchery operators, the feed companies, the processing plant operators, as well as equipment manufacturers and other allied industries.

In some respects, the commercial broiler industry is experiencing a similar trend that many other industries experienced in their early stages of growth. They suffered from "growing pains." Broiler producers in Maryland should keep in mind that broiler production is a relatively young and rapid-growing industry. During the past six years, the number of broilers produced in Maryland increased by over 58 percent, whereas during the same period the number of broilers produced in the United States increased by over 166 percent.

It is thus apparent that Maryland broiler producers have had to contend with stiffer and stiffer competition for the broiler markets of the country.

Can Maryland broiler producers do anything to make broiler production more profitable in the future and thus compete successfully with broiler producers in other parts of the country? Some adjustments may be necessary and if these are put into effect, I see no reason why Maryland broiler producers cannot produce broilers as efficiently as anyone else.

Sounder financing of the industry apparently is in order. The conditions under which Government loans are made to broiler producers in some states should be investigated and certain inequities corrected.

The quality of feed for broilers is being steadily improved so that feed conversion efficiency is better than ever and will improve still further. A lot of broiler producers should pay more attention to the quality of chicks purchased, two of the most important factors affecting returns being rapid growth and white or light plumage with white undercolor. Proper attention to management details in broiler production often make the difference between profit and loss. Adequate floor space and properly ventilated broiler houses according to the season and prevailing weather conditions to adequately control respiratory diseases are also very important.

Many of the larger operators are raising their broilers in smaller sized flocks. Plenty of feeders and waterers are also very important: for each 1,000 broilers there should be 16 to 20 four-foot feeders and 5 or 6 four-foot watering troughs. With the proper kind of chicks, there is no reason why Maryland broiler producers should not be able to compete successfully with broiler producers anywhere in the United States.

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Maryland Poultry Day

PERRY F. TWINING

One of the outstanding events in many years occurred at the University of Maryland on September 15, 1954, when the eyes of poultry people throughout the world were focused on Maryland Poultry Day. Maryland Poultry Day was sponsored by the Maryland State Poultry Council, Inc., The Maryland Turkey Producers' Association, The American Poultry Historical Society, and the University of Maryland. The occasion was the dedication of the new poultry building at the University of Maryland as Jull Hall and as the Poultry Industry Hall of Fame.

The Board of Regents of the University of Maryland named the building Jull Hall as a tribute to Dr. Morley A. Jull in recognition of his many years of outstanding service to the poultry industry of Maryland and the Nation. The Maryland State Poultry Council, Inc., presented a permanent bronze plaque which was affixed to the building.

Jull Hall was selected by the American Poultry Historical Society as the site for the Poultry Industry Hall of Fame. Persons who have, in their lifetime, contributed greatly to the advancement of the poultry industry will be honored by having their portraits occupy places of honor and dignity in the Poultry Industry Hall of Fame.

Maryland Poultry Day also included a chicken barbeque and separate educational meetings for broiler producers, egg producers, turkey producers, and hatcherymen. Secretary of Agriculture Ezra T. Benson was main speaker on the evening banquet program.

It was a great day. Those who were there should feel well rewarded and the Maryland State Poultry Council, Inc., can be very proud of the part it played in bringing such an outstanding event to the doorstep of Maryland poultrymen.

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The Maryland State Poultry Council, Inc., presented a bronze plaque for the new poultry building. The above scene shows Mrs. W. W. Hopkins, Treasurer, Maryland State Poultry Council, Inc., and Dr. Morley A. Jull, Head, Poultry Department, University of Maryland, unveiling the plaque.

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The Maryland State Poultry Council, Inc., presented a bronze plaque for the new poultry building. The above scene shows Mrs. W. W. Hopkins, Treasurer, Maryland State Poultry Council, Inc., and Dr. Morley A. Jull, Head, Poultry Department, University of Maryland, unveiling the plaque.

Box 1013 **Phone 2-1591**

Matthews Poultry, Inc.

616 SALISBURY BLVD.

SALISBURY, MARYLAND

NEW YORK DRESSED and READY-TO-COOK CHICKENS

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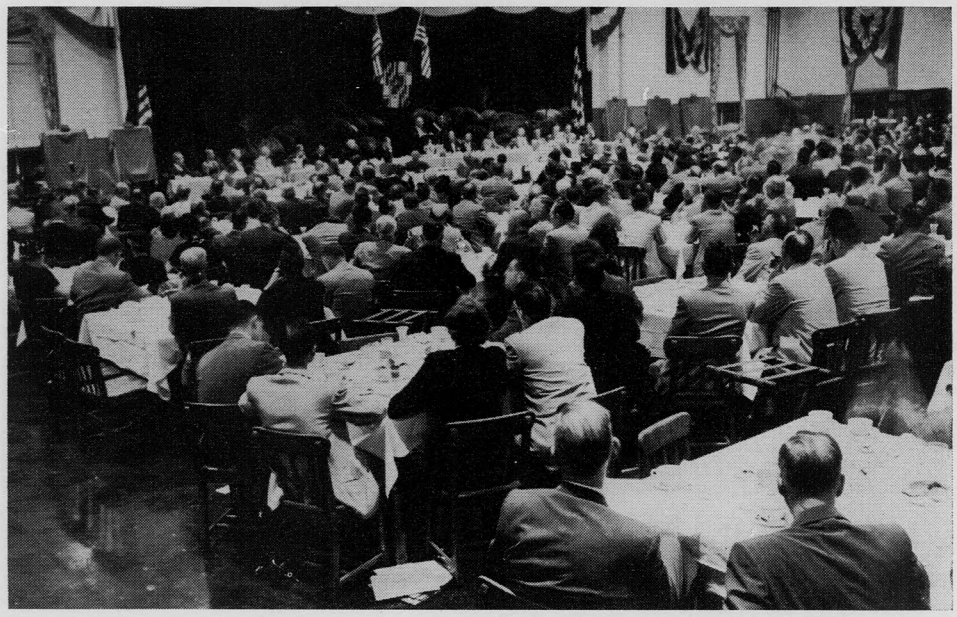

THE WILLIS & COVELL COMPANY

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Sanitation Products — Custom Grinding & Mixing

Phone 353 **DENTON, MD.**

POTT'S POULTRY FARM

M. EMITT POTTS, Prop.

HATCHING EGGS — BABY CHICKS

HILLSBORO, MD. **Phone Hillsboro 3732**

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BACITRACIN, PENICILLIN AND VITAMIN B_{12} FOR THE POULTRY INDUSTRY

Bacitracin and Procaine Penicillin are extremely effective feed supplements for increasing the growth rate of poultry. U.S.I. Antibiotic Feed Supplements are finding increased use at high levels with fish meal rations for greater growth, feed efficiency and improved egg production. U.S.I. products contain a guaranteed amount of antibiotic so your formulations are always full strength.

U.S.I. Vitamin B_{12} Supplement is a product of a primary bacterial fermentation designed solely for the production of Vitamin B_{12}. Vitamin B_{12} enables birds to make use of available protein and thus increase egg and meat production.

U.S.I.'s Antibiotic and Vitamin B_{12} Supplements are supplied separately or in combination to meet individual formulation requirements.

U.S.I. PERMADRY FORTIFIES RATIONS WITH "SEALED-IN" VITAMIN A

Chickens need vitamin A for high egg production, good weight gain and feed efficiency, low mortality rate and for general good health. U.S.I. PERMADRY vitamin A spheroids offer feed manufacturers a tested and superior means of vitamin A fortification. This sealed-in form of vitamin A is manufactured under U. S. Patent 2,496,634 and has been shown in experiment station tests to be far more biologically available to poultry than vitamin A from fish oil sources.

B COMPLEX VITAMINS AID GROWTH OF BIRDS

The addition of B complex vitamins to poultry feed increases growth rate and helps produce more uniform, full-fleshed birds — also aids in protein and carbohydrate utilization. U.S.I. supplies riboflavin, calcium pantothenate (dextrorotatory), niacin U.S.P., and choline chloride. Choline chloride is available in 25% dry mix or 70% aqueous solution.

DL-METHIONINE FOR HIGH ENERGY RATIONS

U.S.I. is the pioneer producer of methionine, the low-cost, essential amino acid. Rations that are supplemented with DL-Methionine produce increased return over feed costs and a more rapid growth rate. Methionine is also effective in improving feathering. Your best supply — from U.S.I.

U.S.I. Feed News A Regular Feature

Each month U.S.I. publishes a full page FEED NEWS in the leading publications reaching nutritional and feed formulation specialists. Informative items of interest to all who use feeds and feed supplements are included. Follow this series in U.S. feed publications for new developments in the poultry feeding industry, or send us your name, address and title on your company letterhead to be placed on our mailing list.

FEED PRODUCTS OF U.S.I.

- CURBAY* B-G 80, dried molasses fermentation solubles
- U.S.I. VITAMIN B_{12} AND ANTIBIOTIC FEED SUPPLEMENTS
- U.S.I. CHOLINE CHLORIDE (25% dry or 70% solution)
- U.S.I. MENADIONE MIXES (vitamin K_3)
- U.S.I. RIBOFLAVIN Products
- U.S.I. NIACIN
- U.S.I. CALCIUM PANTOTHENATE Products
- U.S.I. DL-METHIONINE (feed grade)
- U.S.I. VITAMIN A & D Products (stabilized)

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BRANCHES IN ALL PRINCIPAL CITIES

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Division of National Distillers Products Corporation
99 Park Avenue, New York 16, N. Y.

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BRANCHES IN ALL PRINCIPAL CITIES

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers Products Corporation
99 Park Avenue, New York 16, N. Y.

New Push-Button Treatment for C.R.D.

VetStrep® SPRAY

Convenient, effective, and economical—one container treats 100 birds in only 30 seconds.

New Merck VETSTREP Spray gets medication directly into infected air sacs. Simply press button and let sneezing, wheezing birds breathe in the fine particles of drug. VETSTREP Spray acts fast on disease germs—protects your investment.

One flock treatment with VETSTREP Spray usually does the trick. No handling of birds and possible down-grading. VETSTREP Spray will help you get more pounds of broilers or more eggs to market.

Ask your feed or remedy dealer, druggist or veterinarian about time- and labor-saving VETSTREP Spray.

In the intestinal stage of C.R.D., when diarrhea is the main sign, use VETSTREP Granules in drinking water. This quickly gets medication to the affected parts, reduces death losses, maintains feed intake, keeps birds gaining.

For correct diagnosis of disease, consult your veterinarian or poultry pathologist.

Research and Production for Better Poultry Health

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

© Merck & Co., Inc.

Many outstanding men of Maryland appeared on the program at the dedication of Jull Hall. A view of the principals are shown in the picture.

Left to right: Dr. Morley A. Jull, Head, Department of Poultry, University of Maryland; Judge William P. Cole ,Jr., Chairman of the Board of Regents, University of Maryland; Dr. G. M. Cairns, Dean of Agriculture, University of Maryland; Dr. Wilson H. Elkins, President, University of Maryland; Dr. J. M. Gwin, Director of Extension, University of Maryland; Dr. T. B. Symons, Member of Board of Regents and Past Acting President of University of Maryland.

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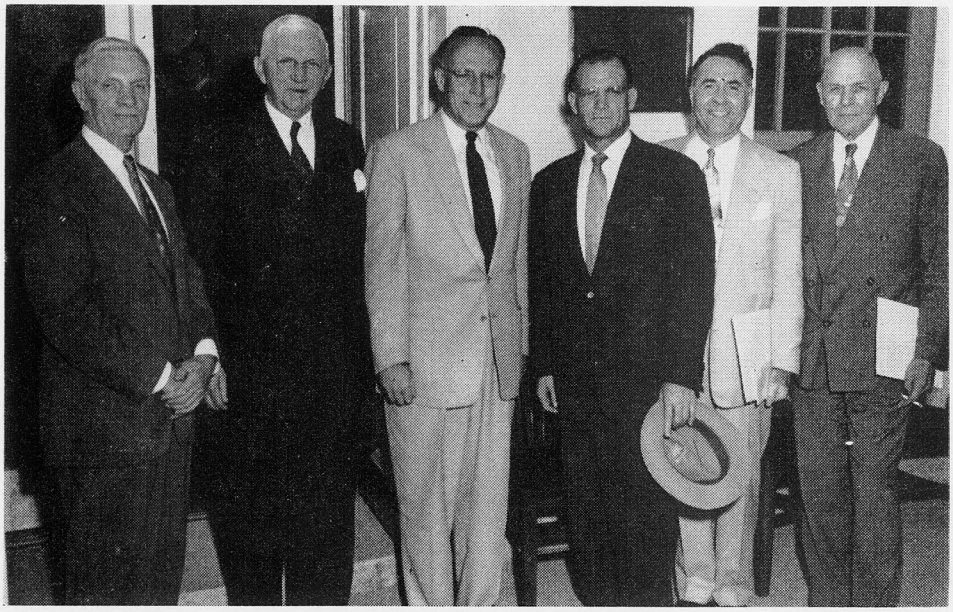

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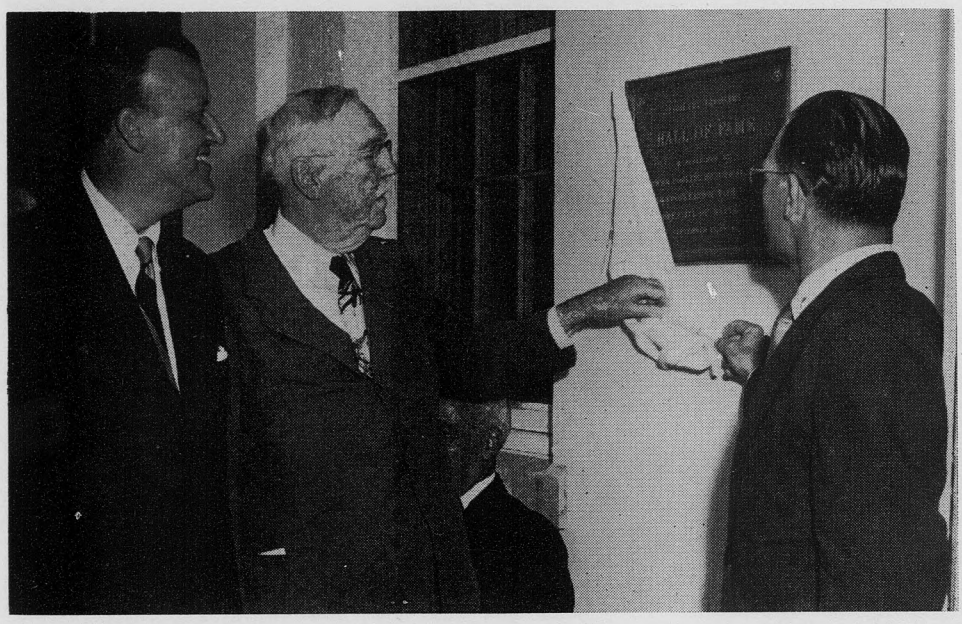
Suppliers of Farmer's Needs

DIAL 2072 — JOHN RIECK, Mgr.

One of the many enjoyable features of Maryland Poultry Day was the chicken barbeque at which 1,000 people were served. The above photo shows the chicken as it was being prepared and some of the people who assisted with the preparation.

Left to right: Calvin Blades, Preston, Md., poultry student; Roy Beauchamp, Pocomoke City, poultry student; and Maye Hansen, Phil Bogdonoff, and Paul Harris, poultry graduate students.



The new poultry building was designated as the poultry industry Hall of Fame. The above portrait shows, *left to right*, Governor Theodore R. McKeldin; Thomas Leavitt, First Vice President, American Poultry Historical Society; Dr. Wilson H. Elkins, President, University of Maryland, unveiling the poultry industry Hall of Fame plaque. Dr. Harry Clifton Byrd can be seen in the background.

BABY CHICKS

HAROLD P. KLAHOLD

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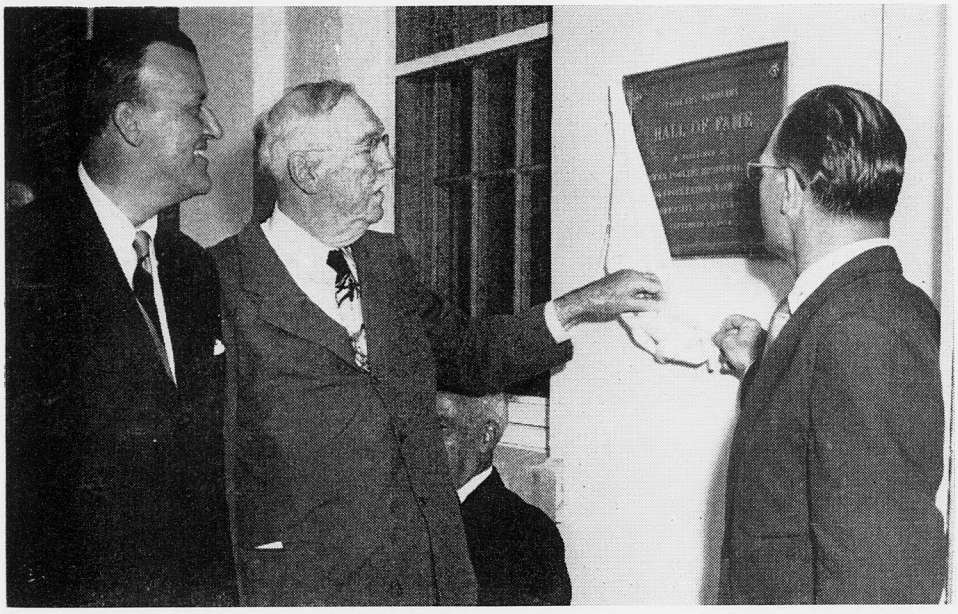

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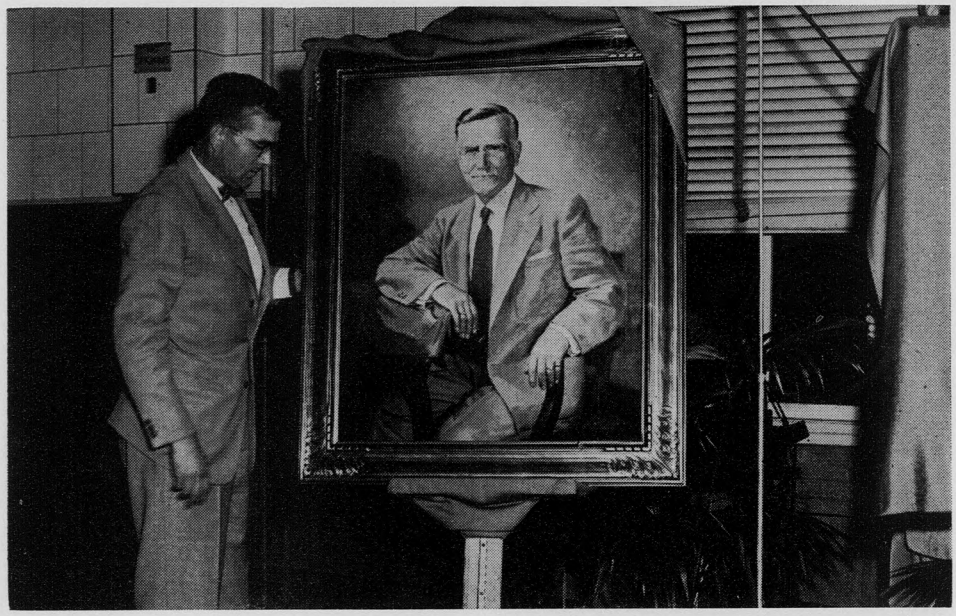

Portraits of five outstanding individuals in the poultry industry were presented to the Hall of Fame at the evening banquet.

Those honored were: Prof. James E. Rice, Mr. Charles W. Wampler, Sr., Dr. W. R. Graham, Mr. L. B. Kilbourne, Mr. Seth S. Barker.

The above picture shows the portrait of Prof. James E. Rice being unveiled by Mr. John V. B. Rice of Trumansburg, New York.

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RIDGELY, MARYLAND

A TRIP TO THE WORLD'S POULTRY CONGRESS

By Oliver Wolfe Sattler

On August 4th we set sail on the Queen Elizabeth, Cunard Line, destination Southampton, enroute to the World's Poultry Congress, Edinburg, Scotland. It was a great event to be on this enormous ship. When the tugs pulled us away from the pier, out into the river, a queer feeling came over us. We watched as we slipped by the New York shore line but when we passed the Statue of Liberty tears began to well up for we realized we were putting a great ocean between us and all that we loved.

The first day at sea the Congress group met in the dining room. There were over 200 people all headed for the Congress: Mr. and Mrs. Maggie Small, two National Turkey F. presidents, Mr. Roscoe Hill and family and Mr. and Mrs. Chester Housah. They came from all over the country; the Art Hamiltons from Oregon, Mrs. Munson from Oklahoma, Mrs. Martha Walker from Missouri, Mr. Hammond from Michigan, Mr. Wixa from Minnesota, the Huffmans from Kentucky, and the Davisons from Georgia. I was the only turkey and Mr. and Mrs. Esham and Mr. and Mrs. Purdue were the only chickens from Maryland. We were all told to get acquainted and enjoy the wonderful ship.

All too soon we were disembarking at Southampton. There at Waterloo Station a very distinguished English man approached me, with "Excuse me, but I represent the Turkey Industry of the British Isles and have come to welcome the American Turkey Producers. Could you give me any information?" By his side was his attractive wife holding a lyre covered with dyed turkey feathers. I located Mr. Roscoe Hill and put them in his care.

By train, we reached London in the wee small hours of the morning. London is a beautiful city; the grass is a bright fresh green, flowers are everywhere brilliant in colors of blue, red, white and yellow. Stores have row upon row of flowers, for each floor of the store has a row of flower boxes full of blooms. The air is brisk and moist, ideal for the growth of plants and beautiful flowers. It rains two or three times a day, the clouds disappear and the sun shines just as often, and no one cares; they just expect such weather. In rain and sunshine we saw all the usual sights of London. We als ohad two beautiful poultry tours planned and given by the English people. The first was attended by all the chicken people and they had a marvelous time but they saw nothing except turkeys and more turkeys. Wires had gotten crossed somewhere, much to our chagrin. However, the next morning the turkey people assembled to visit Mr. W. A. Mottey Ltd., at London Hill Farm, Strockbridge, Hants; a full morning's ride in busses, through the green rolling hills of the fertile English country side. On the farm, huge tents had been erected so when we arrived, caterers were ready to serve us an elaborate lunch which we ate as the rain drops played a tune on the tents. Obligingly, as we ate our last morsel, the sun came out. So, with blue skies, we inspected three of Mr. Mottey's farms. He is a very successful turkey raiser, raising about 18,000 turkeys, but he specializes in selling to growers a 3 lb. turkey instead of a day old poult. His sales talk to growers are:

1. The elimination of Breeding Equipment. 2. The elimination of highly-skilled help. 3. The capital investment is only in 3 lb. turkeys. 4. Growing time is reduced by two months. (This plan fits very well into the English scheme of general farming.

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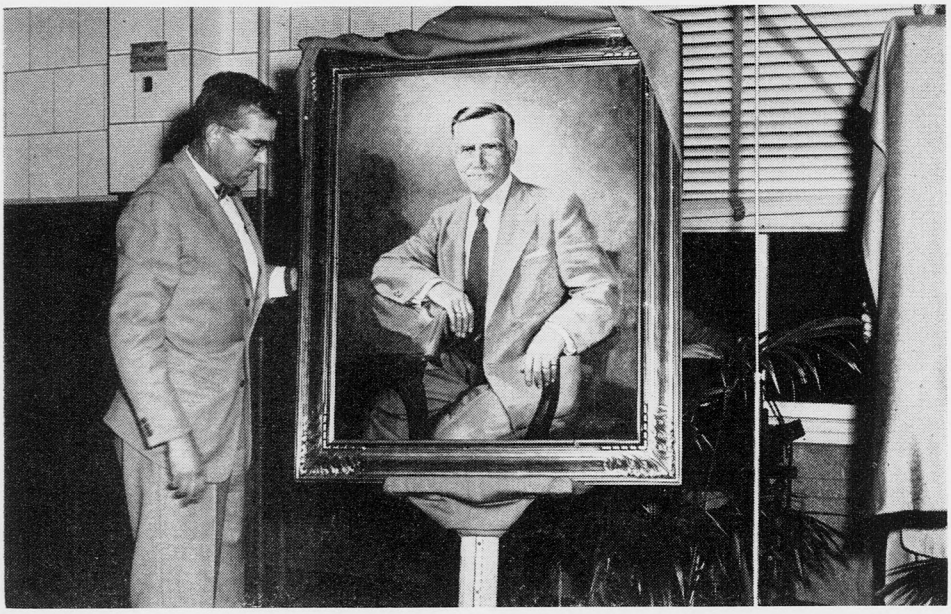

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(Continued on next page)

nest were homemade, resembling little venetian blinds that can swing in but not out. When we went into the hatchery we found 400 little still-air incubators, each of 100 egg capacity. Four women took care of them and their hatchability records were excellent. They have row after row of little brooder houses of 50 poult capacity, also for the next stage of rearing they have row after row of covered porches. Finally they have ranges in small units. The birds were all vigorous looking turkeys. They have a laboratory on the farm where diseases can be diagnosed, they have a feed mill and mix their own feed, they have a lory (truck) with crates that can deliver one thousand 3 lb. turkeys in one consignment.

Mr. and Mrs. Mottey know the turkey game from A to Z. Mrs. Mottey, rosey cheeked, full of charm and energy, had to take over the management of the farms during the wars and she did a superb job.

That night, we did not return to our hotels but took the train for Scotland. We were in Edinburg early the next morning at 6:30 a.m. After a hearty breakfast at our hotel, North British, we found our busses ready for the tour: Edinburg Castle, Holyroode Palace, St. Giles Cathedral, John Knox House, etc. In the afternoon we registered at the Congress and got our program and invitations. All meetings were held at the University of Edinburg, Parliament House, or the Casino with its brilliantly lighted crystal chandeliers.

Edinburg is considered the most picturesque capital in Europe. It is a loveable, homelike city; the people are so friendly and honest, so energetic and cheerful with their "cherios"—the food is excellent and inexpensive, fried fish and potatoes plus tea and bread for 35c. Princes Street, with its alluring shops is beautiful with Edinburg Castle atop a mountain on one side and King Arthur's Seat, a mountain on the other side.

On Aug. 14th the Congress was opened in the auditorium of the University of Edinburg by Her Royal Highness, Princess Alice, Queen Victoria's granddaughter. She is approaching eighty years of age, but from her keeness, her charm, her ease and grace of movement, no one would ever believe it. She gave us a very gracious welcome and at the conclusion immediately gave a translation of her address in beautiful French. All speeches at the Congress were given in English or French and were then translated by an interpreter into the other language. Sixty-one countries were represented and nearly 3,000 were present.

At two that afternoon the Congress Exhibition was opened by Lady Elphinstone in the Waverly Markets right next to the North British Hotel. The exhibits were excellent and there were dressed B.B.B. turkeys that looked like Lovelace's turkeys and some of the Beltsville White were as good as ours. At eight that night we were given a reception by her Majesty's Government in Parliament House.

There were invitations galore. Daily at 10 o'clock some Scotch home was open to Congress members for coffee and again at 4 o'clock another home for tea. Those, I hear, were delightful affairs. There was so much going on the Congress was divided into two parts — The Educational where the papers were read, and the Exhibition Hall with its activities. There were evening invitations, too. An Ice Carnival, an elaborate Turkey Banquet, a dance with entertainment and food called "Scottish High", and a Military Tattoo at Edinburg Castle where the clans, in their high kilts, drill and perform on horses and on foot to the music of their bag pipes and drums.

Another delightful event was our trip in buses along the coast of the North Sea to the Fenton Barns, owned by C. D. Watson & Sons at Drem, North Berwick, East Nothian Scotland. Fenton Barns is composed of three farms where they have an ultra modern dairy, sell milk and pedigree Ayrshire cattle,

(Continued on next page)

Lumber — Building Material

Poultry — FEEDS — Livestock

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The COHN & BOCK Co.

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Saturday morning the Congress closed but we were not present. Our Italian Tour left Edinburg at 8 a.m. Saturday. We hated to leave Scotland and the Scottish people and we had had such a wonderful Congress, seeing and learning and meeting so many interesting people from all over the world.

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What Do Your Chicks Cost?

By JOS. I. TAGGART
Chick Master Incubator Company

In discussing hatchery problems, we find that only a few operators have a standard program for arriving at their chick cost. The plan proposed here is intended to raise questions so that you will give this phase of hatching the attention it deserves.

Your business is not radically different from other industries. If costs and selling prices are kept in line, you have the foundation for a successful enterprise. Sell below cost, and you are headed for trouble. If during distress periods you sell chicks at five cents each, how many do you have to sell at your list price to make up that loss?

Do you know your costs? How do your expenses compare with those of your competitors who are after your business?

Briefly, your costs can be classified under four headings:

Cost of Eggs
Incubation and Hatching
Selling and Delivery
Administrative and General

Each of these will differ widely between breeder hatcheries, plants supplying flock replacements, and those producing broiler chicks, and most of you will be surprised how these costs vary among hatcheries in your classification.

To help you to see where you stand, we have prepared a chart showing the detailed costs of several hatcheries. All of them are well established plants and are typical illustrations of the industry. This chart "Cost of Saleable Chicks", is taken from reports prepared by accountants for income tax purposes for 1951. Since bookkeeping methods are not uniform, the various items have not been grouped the same in each case, but the expenses are listed without duplication.

Across the top of the chart we have designated the type of hatcheries.

In all hatcheries the largest item of expense is eggs, and to be successful you should obtain the maximum number of good saleable chicks from them. The importance of this is illustrated as follows:

If you pay 82 cents per dozen for the eggs and obtain 65% hatch, the egg cost per chick is 10.5 cents. If the hatch had been 80%, the egg cost per chick would be 8.5 cents. Is there any better reason for doing everything you can to obtain high percentage of hatch?

If you will secure an "Egg Cost per Chick" Chart you can determine this expense each hatch day. The other costs cannot be definitely determined until the end of the year, but you can use last year or any previous year's figures as a guide.

Thus, the operator of the average hatchery knows that in 1951 his costs, exclusive of eggs, were 5.35 cents per chick. Therefore, as soon as the operator has his per cent of hatch, he can add the egg cost to the 5.35 cents and establish the total cost per chick. Barring radical changes in operations, this will be a good estimate. People who have kept records for several years find that this is true.

By following the plan of our chart you can prepare a work sheet for that purpose. Most of the items are self-explanatory. Group and arrange your expenses under these headings where you can, but if you have overlapping items, be careful not to duplicate. "Labor" is a good illustration. It has not been treated the same in all hatcheries, but it should include all hired help plus normal wages for owner's time and that of his family spent in actual work about the hatchery. The owner may devote all or part of his time to management or he may spend some of it selling chicks. To obtain

(Continued on Page 34)

ANALYSIS OF DATA ON BROILER HATCHERY COST

Source of Data	Chick Master Incubator Company — 1951				American Pltry & Htchy Federation — 1953			
Location					Western	Southern	Midwest	Northwest
Chicks Sold	2,873,000	7,130,000	3,280,000	1,640,000	1,061,500	4,200,000	5,510,400	7,357,500
Utilization	70%	83%	96%	50%	55%	86%	65%	75%
Operation	Owner	Owner	Manager Raises own Chicks	Same as at left at estimated lower operation				
Cost Per Chick								
Incubation & Hatching	1.052	1.065	0.896	1.432	3.71	1.84	4.36	2.51
Selling and Delivery	0.168	0.377	0.050	0.083	0.20	0.07	0.05	0.03
General and Administrative*	1.260	0.908	0.626	0.651	0.98	0.78	2.11	0.77
Egg Cost	8.760	9.214	8.720	8.720	12.24	7.31	9.19	11.43
Total	11.340	11.564	10.292	10.886	17.13	12.00	15.71	14.74
Total excluding eggs	2.480	2.350	1.572	2.166	4.89	2.69	6.52	3.31

*In original data all salary or wages to owner, owner's family, or manager eliminated. This data included at estimated 0.6¢ per chick assuming for $6000.00 a manager of a 1,000,000 capacity broiler hatchery could be hired. No data for interest on investment or profit included. Interest on investment approximately .01¢ per chick.

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an accurate figure, divide this time between his duties, but do not duplicate. You should not figure his labor at what the business paid him during a flush year but at a price he would be willing to pay someone else. Keep in mind that you are after the true costs before profits start.

Trucking is another item that can be a part of each main heading. When you collect eggs at distant points and transport them to your hatchery, that expense enters into the cost of eggs. In a like manner, delivery of chicks to customers in neighboring states is an expense that belongs under "Selling and Delivery" and should be so entered if you want a picture of your operations. If, however, this expense cannot be divided, place it all under "General", being sure to include truck depreciation and repairs.

Under "Chick boxes, pads, etc." you want the cost of the number used during the period in question. A sizeable quantity may have been carried over from the preceding season, so reasonable adjustment should be made. There will be a substantial difference in this expense between flock replacement and broiler hatcheries, especially in sections where delivery boxes are re-used several times. This custom may be new to some, but it is the established practice in certain parts of the broiler areas.

Since insurance policies sometimes cover a three-year period, they also should be pro-rated for the twelve months in question.

Depreciation on buildings and equipment is a legitimate expense and should be figured on the basis used in income tax reports. The per cent depends on the type of construction, but in most sections 2½% per year is average for buildings. With incubators, the allowable depreciation varies from 6% to 12½%, depending upon your established practice and on the number of months per year they are operated.

Some people question whether Chick Replacements or Adjustments should be listed, but it is an expense that can only be offset by selling additional chicks. They, therefore, become a cost in your production.

Sexing, Vaccination of Chicks, etc., are not included because they are special processing and should be charged for separately.

When you have determined your costs, what can you do about it? First, let's consider the egg cost. Generally, the market price per dozen governs what you pay the producer, and you cannot change that. You do, however, have some control over the percentage of hatch which is influenced by three factors—by the breeding stock, by the care of the eggs, and by the treatment they receive in the incubator.

Every hatcheryman should have some control over the breeding, feeding, and management of the flocks producing his eggs. He also has the right to insist that the eggs have the proper environments to preserve their quality until they are delivered to the hatchery.

Before discussing what takes place in the incubator, let us assume that any standard make incubator will give a good percentage of hatch in the hands of an operator who understands the equipment and is willing to give it the attention necessary. To illustrate: A few years ago I visited a hatchery that had 150,000 capacity of incubators of a model that was no longer being made. The trade looked upon it as a "lemon", but the owner was getting splendid hatches, and I wanted to find out how he was doing it. On each of several visits I found he was doing the little things necessary to make up for the shortcomings of the equipment. Every twenty to thirty minutes he checked each incubator and generally made some adjustment on the temperature, the air intake or the moisture. In contrast, I know of other plants that produced even better hatches yet only

(Continued on Page 36)

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checked their incubators twice a day, and then seldom make an adjustment. Most hatcheries are somewhere between these extremes. The extra checking of the first plant was necessary because the construction of the incubator was not balanced with the arrangement of eggs, and, furthermore, the controls were definitely second grade. The right combination of these factors makes it possible to maintain the proper embryo temperature without overheating, and that is what you should have.

The ideal incubator control is one that does not call for experienced or skilled labor. That has been the goal of the manufacturers for generations, and while some come close, no one has reached that ideal. Experience shows, however, that some controls come nearer being perfect than others. This is evident by the fact that some hatcheries seldom have trouble and almost never a failure, while others damage a hatch or even lose one every few months. If your chicks cost 14 cents each and you lose 5,000 by some operation failure, you have lost $700.00. Furthermore, you will have to sell 23,334 chicks at a 3 cent profit each to offset that loss. To make money, hatches must be uniform, not good one week and off somewhat the next. Failures must not occur, and to prevent them you should have well constructed incubators with dependable controls. Then, keep them in good condition so that you can always have a high percentage of hatch. That is the way to keep the "Egg Cost per Chick" down.

Labor is the second item of expense in importance. The size of this is determined by the management, the type of equipment used, and the arrangement of the hatchery. Let's take some illustrations. I know several hatcheries that average one workman for each 75 to 80 thousand egg capacity, and of one plant where the foreman is allowed one man per 100,000 capacity. This covers all help except in the office. There are other hatcheries that hire four and even five men per 100,000 capacity. Sometimes these owners think they get better chicks by use of expensive labor practices and methods of hatching, but do they? Results speak for themselves. Remember, the big difference in the labor costs depends upon the management, the way the work is laid out, and the type of equipment they are using. Which of these can you improve on?

The capital invested in hatching equipment does not vary as much as the building space required to operate. A modern building of cement block construction, concrete floor, and good roof, costs from $5.00 to $8.00 per sq. ft. of floor space. Since some incubator equipment requires two to three times as much floor space as others, that has an influence on your profits. Not only the initial cost, but the heating, repairs, taxes, and insurance must be taken into consideration. The arrangement of the building and the streamlining of your operations are quite important as they affect your entire operation.

Breakdowns are costly, principally because of the interruption in hatches and the way it affects the eggs, the quality of the chicks, and the per cent of hatch. You, therefore, should keep your equipment in good repair, or, better still, equip your hatchery with the type of incubators that call for little upkeep. We know of hatcheries that do not spend $25.00 a year per hundred thousand capacity, and we also know of some that spend ten times that much. Remember, it is not the cost of repairs that is so expensive but the effect of breakdowns on your percentage of hatch that costs the real money.

Insurance, taxes, rent and depreciation are costs that you have whether you operate three months or twelve months during the year.

As you know selling and delivery

expenses are an important item. They should both pay their own way.

In all your planning to reduce cost do not overlook yourself. Management is just as important in your business as in any other. Plan your work and see that it is done. If you do extra processing such as sexing, etc., see that each operation pays its way. Know your costs, sell at a profit, and you have the foundation of a successful enterprise.

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Broiler Production Efficiency

By HAROLD D. SMITH

University of Maryland

A recent study made of the economic trends in the Delmarva broiler industry showed some interesting developments which materially affect income to local producers. One phase of the study had to do with the volume of production in that area and its relation to other areas competing for the total broiler market. The other phase pertained to the over-all changes in efficiency of production in the past five years.

Area Comparisons

It may be of interest to note that the Delmarva area through 1951 was an expanding broiler center. Production dropped slightly in 1952 and was higher again in 1953. In looking at Delmarva's production in comparison to other areas we see that Delmarva has declined percentage-wise compared to U. S. production from 31 percent in 1947 to 14 percent in 1953. The percentage decline over that six year period, however, was not so much due to a decrease in Delmarva production as to the large volume increase for all other areas.

Changes in Efficiency

Changes in efficiency which have occurred in the six year period are far more important to growers in the short run than changes in the level of production.

It is hard to realize that in 1947 it took 13 weeks to grow a three pound broiler while by 1952, just six years later, only eleven weeks were required. Recently that figure has been reduced to approximately ten weeks. Not only is it true that a heavier bird was being produced at a younger age but less feed was required per pound of gain.

Changes in feed efficiency are even more phenomenal. In 1947, four pounds of feed were required for each pound of broiler sold while in 1952 only 3.4 pounds were consumed. This amounted to a saving of two pounds of feed for every three pound broiler that was grown in 1952 as contrasted to 1947. The saving in dollars and cents in feed alone could amount to $100 per 1000 birds raised—a big factor influencing the total cost of broiler production in recent years.

Needless to say the trend toward greater efficiency is a result of better breeding stock, new discoveries in the field of nutrition and improved management practices. While these changes and their effect on the grower indicate real progress developments in the future may result in even greater efficiency.

Cost of Production and Selling Price

In tabulating over 350 flocks records covering the period 1947-52 on the basis of the selling price f.o.b. farm, it was generally found that flocks bringing higher prices were those having a high cost of production—probably due to a better finished bird. And, of course, returns to growers were higher. Returns above out-of-pocket cost were almost always negative when the selling price was below 25 cents. Since the date of this study, however, more of our growers are able to make a profit on a 25 market due to increased efficiency. The selling price was not closely related to size of flock or the age of birds. There was, however, a relationship between selling price and mortality indicating that low selling prices were associated to flocks having high mortality. This sounds reasonable since high mortality often leads to poor quality among the remainder of the flock.

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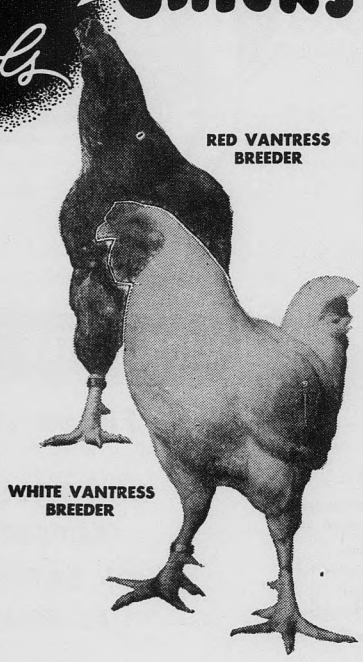

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Feather, Color Again

ED. KELLY

The white-feathered chicken is beginning to run away from the field. But there are still hundreds of thousands of reds and many thousands of black-feathered crosses grown here.

But even among the red bird growers and processors there is a marked demand for reds with a very light undercoating. The grower gets a fair price on these and the processor can put out a pleasing package with not too much delay on his dressing lines.

The most spectacular part of the newspaper story might be in the number of hatcheries, large growers, and processing plants that will just handle whites. That's what their market demands and pays them for, they say. Actually there is just one processing plant on record as just handling whites, but many of the others exhibit such a preference as to exclude other colors.

And this story—the overwhelming tide to whites—has broken in three very short years. Just remember, it took the peninsula industry from eight to ten years to switch from the dark-feathered Barred Rock Cross to the red New Hampshire.

Perhaps we are now at the most interesting point in the feather color development. We see competition among those breeders who brought in the white feather—and this competition is being quickly heightened by the entry into the field of the established breeders who gave us outstanding reds and crosses, who are now introducing carefully-developed whites and white crosses.

This is improving the Delmarva chicken, too.

Just think back to the comments among industry men when red chickens were appearing. The reds were criticized mainly for their apparent inability to stand up to disease and tough conditions alongside the hardy cross.

When this was somewhat ironed out —through improved breeding, management and the pressure of the American housewife for a neater chicken—the red came into its own.

Now we have just passed through a similar period with the white. One of the most popular strains of whites was roundly called to task for a high mortality during the first few days in the chicken house. This has been straightened out now.

And so it will be with all the coming strains. Problems will be met and conquered.

We might sum up by saying the white chickens have stolen the spotlight. But the reds are still strong in the picture. The dark feathered cross has weakened.

What's next? Something yellow, green, or red, white and blue?

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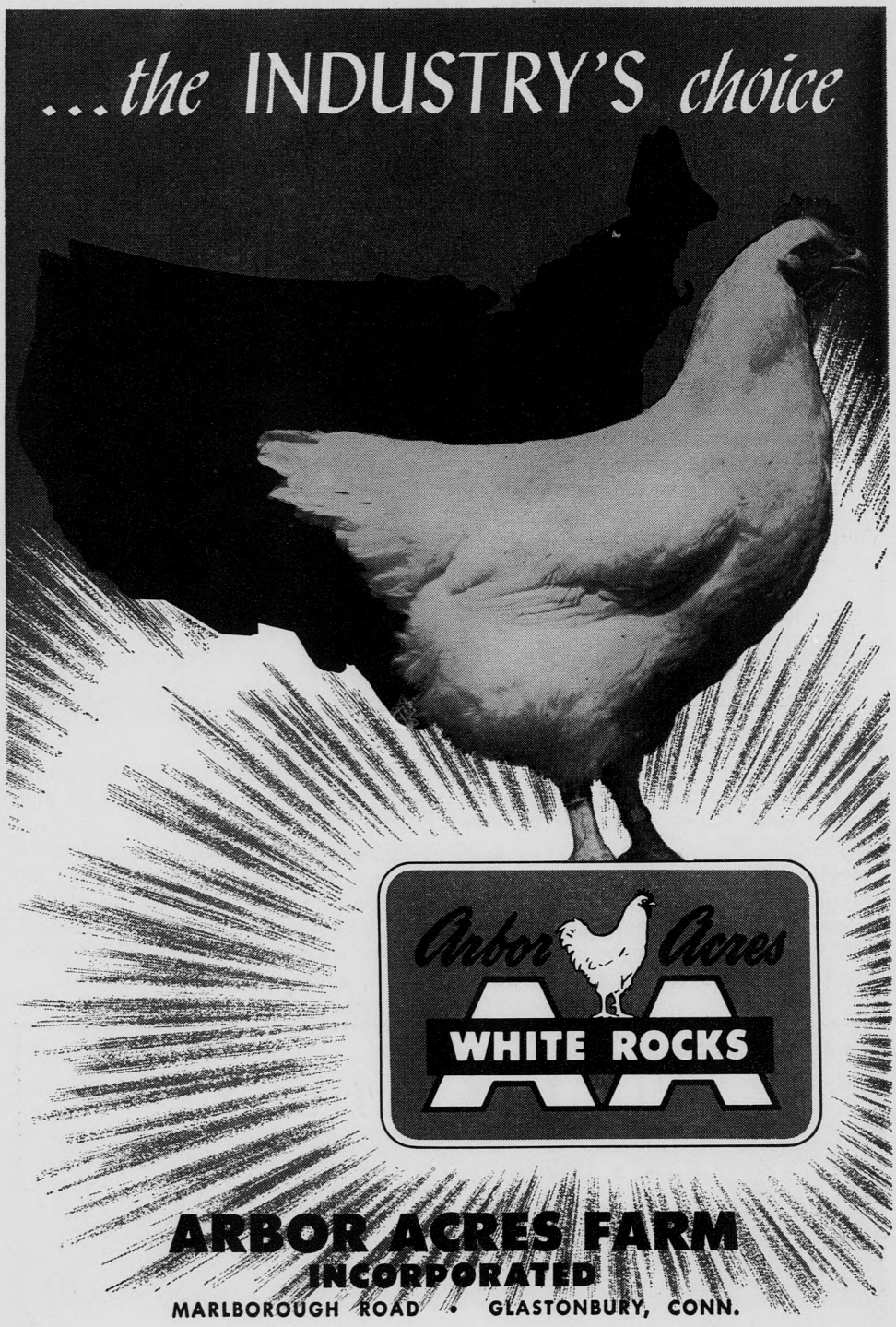

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POULTRY FOR INSTITUTIONS

By HAROLD D. SMITH
University of Maryland

Institutions are one of our largest buyers of Maryland produced poultry. Yet, according to a survey made by the Department of Agricultural Economics at the University of Maryland, we have just begun to develop our market to institutions. By institutions we mean restaurants, public schools and colleges, hotels and hospitals.

We are wrong in assuming that the buying practices of institutions are the same as those of housewives. They are different in many respects. Some of the buying habits peculiar to institutions are: (1) there is a higher preference for lighter weight birds to be served at banquets and other special occasions, (2) institutions buy a larger percentage of their poultry as New York dressed than do housewives and (3) institutions do their heaviest buying in the middle of the week rather than on week-ends. Buyers for these institutions are very conscious of what they want when they place their order for poultry. In most cases good quality and uniformity in bird size are two factors of utmost importance.

Quality Important

In order that we might know more about the amount of emphasis given to quality, buyers were asked if they had ever had occasion to reject an order of poultry and if so, to give their reason for rejecting it. Frequently buyers objected to the making of substitute orders when wholesalers were unable to supply the quantity and weights desired. Furthermore, concern was expressed by buyers about shipments that were not properly handled and iced. It was evident from these comments and others, that good quality and uniformity of birds were important.

Of those institutions contacted most of them were buying their poultry through local wholesalers. In some few instances they were buying from local processing plants and/or direct from the farmer. Their poultry, including both meat and eggs, was generally bought in large volume.

Other Meats

While institutions buy large quantities of beef, pork, and seafood it is significant that poultry constitutes about 15 percent of their total meat purchases. The amount bought can be related to the number of people served daily, the price of poultry in relation to other meats, and probably most important, customer demand.

It is generally believed by institutional poultry buyers that there has been an increase in chicken purchases within the past five years. The main reasons for this increase are: (1) an increase in the number of persons being served, (2) a more favorable price relationship with other meats, and (3) customers ordering chicken more frequently.

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Many poultrymen throughout the East have found that Purina HIGH-EFFICIENCY Laying Chows produced more eggs per bag than lower-efficiency rations they were using. The increase was large enough to LOWER the FEED COST per DOZEN EGGS, even though Purina cost a little more per bag. In fact, results have been so good that half a million MORE hens have been changed to Purina in the two years since we introduced our new HIGH-EFFICIENCY formulas.

There's bound to be a reason for this big shift, and the reason is simply LOWER FEED COST per DOZEN EGGS. Try Purina for several weeks. Keep accurate records. See for yourself how much you save. We'll be glad to help you keep records and figure your results, if you like.

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Both results have lowered the cost per dozen eggs from many breeder flocks. Try Purina. Keep records. See for yourself.

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HURRICANE HAZEL

Hurricane Hazel which hit the North Carolina Coast on October 14 and moved up through the middle Atlantic area into Canada on October 15 and 16 resulted in heavy loss to Maryland and Delaware farmers. Damage was heaviest in the southern half of the Eastern Shore and in Southern Maryland.

It is estimated that the broiler industry on the Eastern Shore of Maryland and Delaware lost housing capacity of nearly 10 million broilers and extensive damage occurred to many of the remaining broiler houses.

Congressman Miller, Senator Butler and Governor McKeldin immediately made available all forms of disaster assistance, both Federal and State, possible.

Harold P. Klahold, Preston, Maryland, President of the Maryland State Poultry Council, and Senator John Marshall Butler inspecting damage to broiler houses on the farm of Nelson Covey, Preston, Maryland.

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BROILER FUTURES

J. L. NICHOLSON
Extension Poultryman

Trading in futures is new to many of us in the poultry industry, however, farm products have been carried on the New York Mercantile Exchange since 1872. Other commodities which are traded on the future board include eggs, butter, onions, potatoes, sugar, grain, cotton and soybeans. During 1952 the New York Mercantile Exchange futures in potatoes exceeded 121,000 cars or 6½ billion pounds. On September 7th, 1954, futures trading in broilers began on the New York Mercantile Exchange. Options were opened for the months of December and February, thus giving anyone connected with the broiler industry an opportunity to sell or buy broilers four to six months in advance of delivery. By observing the futures trading, a grower will have an indication of the price of his broilers on the farm well before ordering chicks. In addition to this, it is also possible to secure the quotation offered on the futures for his broilers when they are grown, even before the chicks are started. On the other hand, if the futures trading is set below the price which the grower must have to profit, he can forestall starting his flock and thus avoid a loss of capital and labor. To clarify the procedures in trading on the futures for protection or hedging, the following example is given of a broiler grower desiring to start 12,000 birds in February for market in April:

In January the grower calls a local broker and is informed that April futures are selling at 45c which is equivalent to 25½c live weight on the farm. The grower, feeling that the 25½c price is profitable, instructs the broker to sell 3 units (1 unit is 10,000 lbs. frozen eviscerated) on the exchange.

During April when his birds become of market age, the grower sells his live broilers to a local dealer for 23c. He then contacts his broker and learns that April futures are now closing at 41½c. He tells the broker to buy 3 units and thus cancels out the 3 units that he had previously sold in January and receives a profit of 2½c which offsets the live price of 2½c less than he received for the birds he grew. By making use of the futures market the grower has hedged or guaranteed himself a set price before the chicks were even ordered.

The same hedging operation may be carried on by a processor wishing to store broilers or make commitments for deliveries at a later date.

The broker charges $20.00 commission per unit traded. There is also an additional $2.00 clearing house fee. This $22.00 entitles one to a round trip which means to buy a unit and later sell it or vice versa. The minimum bidding price fluctuation is 5/100c per pound or 5 points. The day's maximum price change can not exceed or drop below 2c of the previous day's settlement price. At the time of trading the broker must receive a deposit of $400.00 for each unit (initial min. margin). Thereafter, a margin of $300.00 must be maintained in the event of price fluctuation. Should the price go up 1c per pound in the case of the seller or down 1c in the case of the buyer, the broker would have to receive $100.00 per unit to maintain this margin.

Contract specifications call for a trading unit, consisting of 10,000 pounds of Grade A frozen, ready to cook, young chickens, weighing between 1½ and 3 pounds. The unit can consist of from one to four lots, each lot weighing no less than 2,000 pounds. All lots in a unit must be stored in one Exchange-approved warehouse in either New York City or Jersey City, New Jersey.

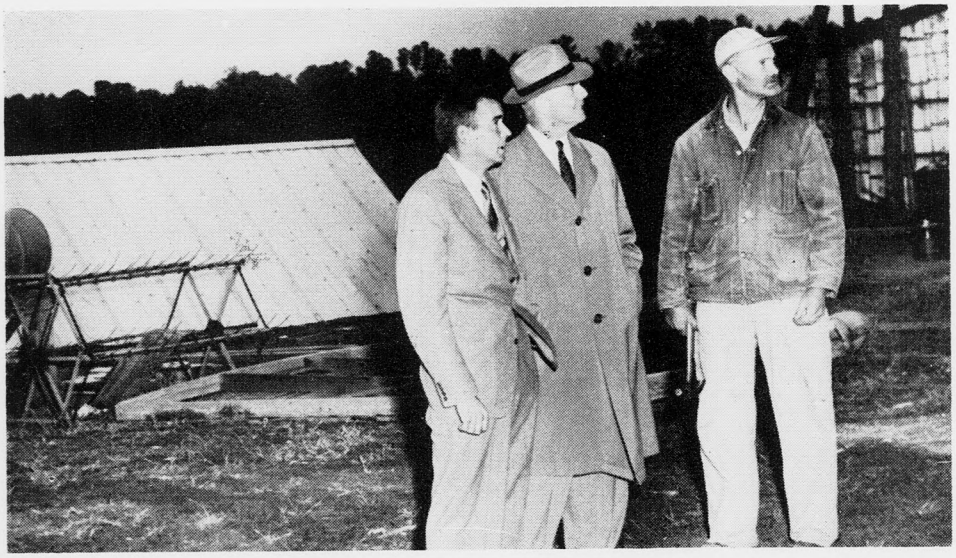
A provision for substitute grades has been made. When a unit contains from 80 to 89.9 per cent U. S. Grade A chickens, the balance being U. S. Grade B chickens, the seller will allow the buyer a half cent per pound on the entire

HURRICANE HAZEL

Hurricane Hazel which hit the North Carolina Coast on October 14 and moved up through the middle Atlantic area into Canada on October 15 and 16 resulted in heavy loss to Maryland and Delaware farmers. Damage was heaviest in the southern half of the Eastern Shore and in Southern Maryland.

It is estimated that the broiler industry on the Eastern Shore of Maryland and Delaware lost housing capacity of nearly 10 million broilers and extensive damage occurred to many of the remaining broiler houses.

Congressman Miller, Senator Butler and Governor McKeldin immediately made available all forms of disaster assistance, both Federal and State, possible.



Harold P. Klahold, Preston, Maryland, President of the Maryland State Poultry Council, and Senator John Marshall Butler inspecting damage to broiler houses on the farm of Nelson Covey, Preston, Maryland.

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BROILER FUTURES

J. L. NICHOLSON
Extension Poultryman

Trading in futures is new to many of us in the poultry industry, however, farm products have been carried on the New York Mercantile Exchange since 1872. Other commodities which are traded on the future board include eggs, butter, onions, potatoes, sugar, grain, cotton and soybeans. During 1952 the New York Mercantile Exchange futures in potatoes exceeded 121,000 cars or 6½ billion pounds. On September 7th, 1954, futures trading in broilers began on the New York Mercantile Exchange. Options were opened for the months of December and February, thus giving anyone connected with the broiler industry an opportunity to sell or buy broilers four to six months in advance of delivery. By observing the futures trading, a grower will have an indication of the price of his broilers on the farm well before ordering chicks. In addition to this, it is also possible to secure the quotation offered on the futures for his broilers when they are grown, even before the chicks are started. On the other hand, if the futures trading is set below the price which the grower must have to profit, he can forestall starting his flock and thus avoid a loss of capital and labor. To clarify the procedures in trading on the futures for protection or hedging, the following example is given of a broiler grower desiring to start 12,000 birds in February for market in April:

In January the grower calls a local broker and is informed that April futures are selling at 45c which is equivalent to 25½c live weight on the farm. The grower, feeling that the 25½c price is profitable, instructs the broker to sell 3 units (1 unit is 10,000 lbs. frozen eviscerated) on the exchange.

During April when his birds become of market age, the grower sells his live broilers to a local dealer for 23c. He then contacts his broker and learns that April futures are now closing at 41½c. He tells the broker to buy 3 units and thus cancels out the 3 units that he had previously sold in January and receives a profit of 2½c which offsets the live price of 2½c less than he received for the birds he grew. By making use of the futures market the grower has hedged or guaranteed himself a set price before the chicks were even ordered.

The same hedging operation may be carried on by a processor wishing to store broilers or make commitments for deliveries at a later date.

The broker charges $20.00 commission per unit traded. There is also an additional $2.00 clearing house fee. This $22.00 entitles one to a round trip which means to buy a unit and later sell it or vice versa. The minimum bidding price fluctuation is 5/100c per pound or 5 points. The day's maximum price change can not exceed or drop below 2c of the previous day's settlement price. At the time of trading the broker must receive a deposit of $400.00 for each unit (initial min. margin). Thereafter, a margin of $300.00 must be maintained in the event of price fluctuation. Should the price go up 1c per pound in the case of the seller or down 1c in the case of the buyer, the broker would have to receive $100.00 per unit to maintain this margin.

Contract specifications call for a trading unit, consisting of 10,000 pounds of Grade A frozen, ready to cook, young chickens, weighing between 1½ and 3 pounds. The unit can consist of from one to four lots, each lot weighing no less than 2,000 pounds. All lots in a unit must be stored in one Exchange-approved warehouse in either New York City or Jersey City, New Jersey.

A provision for substitute grades has been made. When a unit contains from 80 to 89.9 per cent U. S. Grade A chickens, the balance being U. S. Grade B chickens, the seller will allow the buyer a half cent per pound on the entire

weight of the unit. When the unit contains from 70 to 79.9 per cent U. S. Grade A chickens, the seller will allow the buyer 1½ cents per pound on the weight of the entire unit. No unit containing less than 70 per cent U. S. Grade A shall be valid or acceptable for delivery. No chickens may be delivered six months after original processing.

For a commodity to meet the physical requirements for trading on the futures, it must be storable. For this reason, frozen whole ready to cook broilers are used. The fact that only a very small portion of broilers are marketed in this form should not influence trading, for in most instances, delivery will not be made. In the example of the grower given above, he bought back his contract and cancelled his commitment and sold his live birds through a regular channel. The same would ordinarily apply to the processor and certainly in the case of a speculator.

However, the occasion may arise when it would be desirable to deliver or take delivery. Such a situation would occur if the farm price was not in line with the futures quotation. To meet this situation and to make trading more attractive, proposals are being made to change from frozen to ice pack. The specifications and packaging requirements would remain the same. The buyer would, however, have the opportunity to freeze the poultry right at the time of delivery for $23.00 per unit.

During the Exchange's first two months of operation, trading has been relatively light with the highest number of trades in one day being only four or five. Most all of the trading has been conducted by hatcheries, feed manufacturers, processors and speculators. Very few, if any, actual growers have ventured into the activity. It is anticipated that active futures trading will help to stabilize the market and, thereby, eliminate the many risks and losses which have been detrimental up until now.

Below is a table showing a comparison between the current on the farm broiler price and the approximate equivalent futures trading price. The accuracy of this table depends largely on the sensitivity between the two levels and the degree of activity of futures trading.

Farm Price	Futures Market Quotation
.18	34.50
.18½	35.19
.19	35.89
.19½	36.58
.20	37.28
.20½	37.97
.21	38.67
.21½	39.36
.22	40.06
.22½	40.75
.23	41.45
.23½	42.14
.24	42.84
.24½	43.53
.25	44.23
.25½	44.92
.26	45.62
.26½	46.31
.27	47.01
.27½	47.70
.28	48.40
.28½	49.09
.29	49.79

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Forecasting Broiler Price

By RAYMOND G. WISE
Agricultural Statistician, A.M.S., U.S.D.A.

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The price of live broilers in the Delmarva broiler area is primarily determined by the supply of and demand for broilers in the U. S. as a whole and secondarily by the supply of and demand for broilers within the Delmarva area.

In order to forecast the price of broilers up to 4 months in advance, one should first determine the supply vs. price relationship. In determining this relationship, it is necessary to weigh and eliminate the effect of as many of the variable factors affecting the supply of and demand for broilers as possible.

Chief factors affecting the supply of broilers include:

1. Commercial broiler chick placements in Delmarva and the U. S. as a whole three months earlier.
2. Rate of broiler death loss.
3. Direction and degree of shift in average age of broilers marketed.
4. Seasonality of production.
5. Cold storage holdings of broilers.

Chief factors affecting the demand for broilers include:

1. Supply of other poultry meat including cold storage holdings.
2. Supply of red meats including cold storage holdings.
3. Seasonality of demand.
4. General level of wholesale prices.
5. Unemployment level.
6. Rate of population change.

Determining Supply

Monthly broiler chick placements in all weekly reporting areas expressed as a percent of placements during the corresponding month a year earlier is a reliable indication of broiler supply three months hence. (It can be extended nearly an additional month by estimating change in placements based upon egg settings.) Live broiler supply during any given month is equal to chick placements three months earlier, minus death loss, plus or minus the effect of a shift in the average age of birds marketed. In the Delmarva area death losses amount to about 5 percent during the summer and fall months and from 8 to 15 percent in the winter and spring months. Annual averages have varied from 7 to 11 percent in recent years. Effects of the shifting average age of broilers marketed may be determined by observing the relationship between current weekly marketings and expected marketings based upon average chick placements 10 - 13 weeks earlier, minus death loss.

By using monthly broiler chick placements in all weekly reporting areas expressed as a percent of placements during the corresponding month a year earlier as an indication of supply, the effect of production seasonality is eliminated. Since the level of cold storage holdings of broilers is so low as to make the effect of any change insignificant, one needs only to consider the effect of a change in death loss and/or the effect of a change in the average age of broilers marketed to arrive at a very reliable indication of broiler supply.

The indication of supply may be extended an additional month by using the percent change in weekly egg settings from the same period a year earlier. However, this assumes no net change in shipments or hatchability and therefore is not as accurate an indication as actual chick placements.

Determining Demand

Determining an indication of demand for broilers is more difficult than that of supply. Except for the supply of other

(Continued on Page 54)

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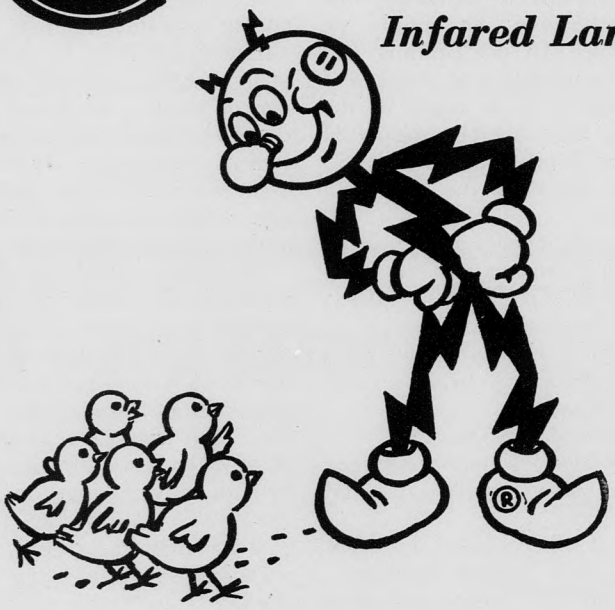

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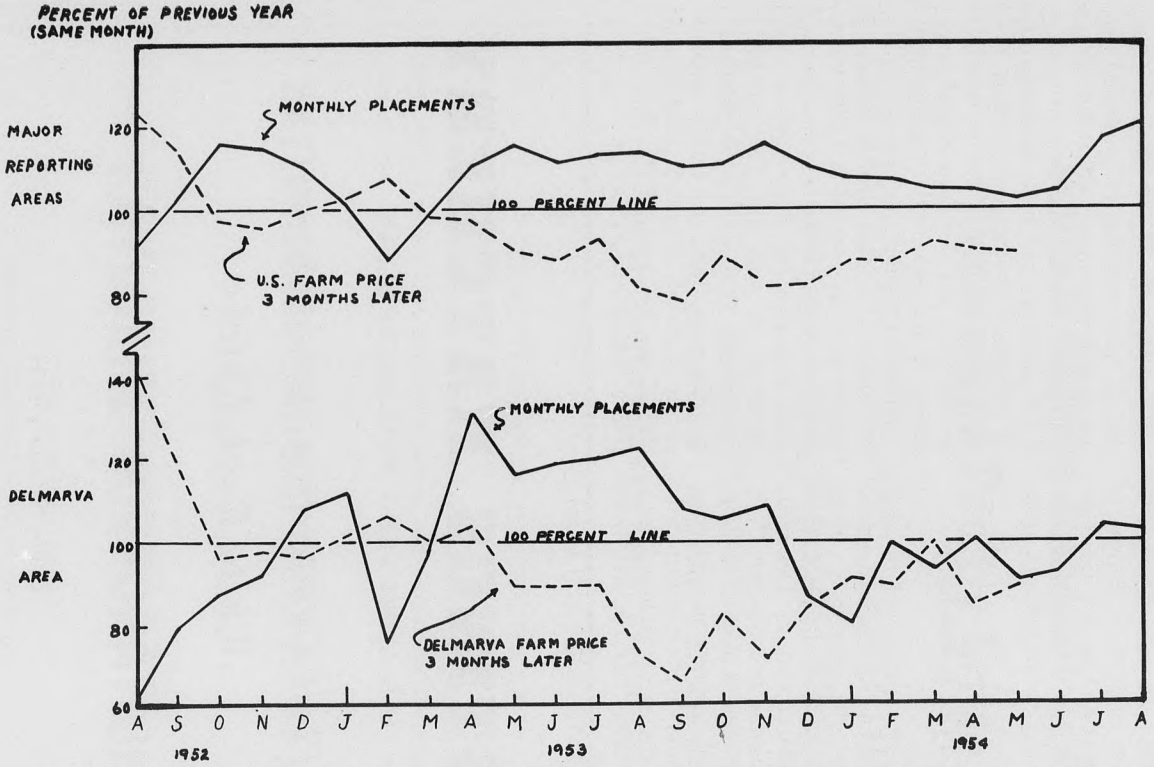

MONTHLY BROILER CHICK PLACEMENTS IN BROILER AREAS EXPRESSED IN PERCENT OF PREVIOUS YEAR AS RELATED TO MID-MONTH FARM PRICE OF BROILERS THREE MONTHS LATER IN PERCENT OF PREVIOUS YEAR, 1952, 1953 AND 1954.

SOURCE: A.M.S., U.S.D.A.

poultry meat and red meats, the factors affecting demand are for the most part insignificant as far as indications of change in the short run are concerned. It is therefore necessary to treat demand for broilers as a constant, but to take any known changes in supply of other poultry meat and/or red meats into consideration when reading a percent change from a charted supply vs. price relationship.

Supply vs. Price Relationship

The supply vs. price relationship charted above shows a closer negative relationship for the reporting areas placements vs. U. S. average price, than the Delmarva placements vs. Delmarva price. This is simply because the U. S. average price is determined to a large extent by the placements in reporting areas. The Delmarva price is primarily determined by the same factors affecting the U. S. price but departs from it due to local conditions and supply situations.

In order to forecast the Delmarva price, one should first attempt to forecast the U. S. average price, making some allowance for the effect of factors which have not been eliminated such as other poultry meat and red meat supply, and then read the Delmarva chart. Price readings are first made in terms of percent of price a year earlier. These price percents must then be multiplied by the price for the same month a year earlier to be converted to actual prices.

Different individuals will give different weights to the various influencing factors but, in general, a fairly narrow range of price predictions can be made with a reasonable degree of accuracy. However, as with any other method of forecasting, this one has its limitations both in procedure and in the accuracy of the statistics involved. Therefore, it should not be used as the sole indicator of future broiler prices.

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Maryland Turkey Producers' Association

Activities for Year

Summer meeting at Hotel Plemhinnon at Ocean City, Md., was well attended and everyone seemed to enjoy a dip in the surf followed by an excellent turkey dinner. Governor McKeldin was the principal speaker, followed by Dr. Morley Jull, University of Maryland.

The Maryland Turkey Producers participated in the National Mid-Summer Turkey Time by joining with the Maryland Vegetable Growers in various radio and television programs promoting the sale of vegetables and turkeys. Several Maryland turkey producers appeared on these programs and the publicity, plus the special prices that were offered during this period, did much to provide the sale of turkeys.

The annual meeting of the Turkey Producers was held at College Park in conjunction with Maryland Poultry Day on Sept. 15. Dr. W. A. Billings, Extension Veterinarian from the University of Minnesota, was the principal speaker. His down-to-earth approach to the numerous problems of the turkey people makes him a very well known and much enjoyed speaker. Other speakers on the program were Dr. Marlow Olsen, Beltsville; Dr. Raymond Parkhunt, Roanoke, Va.; and Dr. Paul Margolf, of Penn State University. The meeting was well attended and everyone enjoyed not only the turkey program but also the dedication of Jull Hall and the splendid banquet when Secretary of Agriculture Benson was the speaker. It was a memorable day.

The directors of the Turkey Association were very active during the year, conducting most of the business of the association by holding directors' meetings at members' homes. In this way they were able to combine business with pleasure and resulted in a very constructive as well as pleasant year for the association.

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Pole Type Housing

By ROY GLOTFELTY

Numerous articles have been written recently about Pole Type Housing. This will be a report on the performance of one in Garrett County.

The building was erected in August, 1953, and since that time has housed about 15,000 Beltsville White Turkey Broilers. Mortality has been less than 2%.

The building, 228' by 36', is constructed of all local lumber. Locust poles were used for posts. They were placed on 12' centers and concrete poured around them. Rough sawed oak for the roof construction was used. Oak 2" by 10" were nailed to the poles for rafter plates, and oak 2" by 6" on 30" centers for rafters. Roof sheeting is of inch oak. Galvanized steel was used for roofing. The roof has a pitch of 1½" per foot.

For summer use, all but 2 feet of the back side is sheeted solid and 4 feet of the front left open. Both openings are covered with wire.

For winter use, the back or west side and both ends are closed solid. The front is closed with large panels covered with wire glass.

Total cost of the building was approximately thirty cents per square foot.

Sawdust is used for litter and has been excellent. Several times during real cold weather it got pretty damp. A small layer removed from the top remedied the situation, but for the most part the building has been dry and comfortable for the birds.

Poults are debeaked and placed in the building when they are about eight to nine weeks old. Last March we had some ten week old poults in the building when the temperature dropped to near zero for several days. The poults did fine.

So far we have been very well pleased with the results obtained in both winter and summer use. Disease has been no problem. The litter has stayed in good condition most of the time.

For year around production of Beltsville Turkey Broilers, the pole type shed has its place in that it provides shelter and sanitary conditions for the birds under most all weather conditions.

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BETTER TURKEYS

C. S. SHAFFNER
Poultry Department, University of Maryland

The question is sometimes asked, "Why seek new information when we don't use all of what we have?" With this in mind, it seems appropriate to review and set forth what we already know about the possibilities of improvement of turkeys through breeding. It seems to me that one of the most important traits of economic importance is that of reproduction. We know that the factors of egg production, shell quality, fertility and hatchability, all of which influence the number of poults that are produced by each hen, are all influenced both by heredity and environment. Unfortunately, it seems that much of the variation among birds is the result of variations in environment, yet it has been adequately demonstrated that the reproductive ability of most strains can be greatly improved.

The factors of growth rate and adult body size are likewise hereditary in nature and seem to be closely associated. Yet it seems entirely probable that strains can be developed that have rapid early growth yet are not excessive in size. The factor of breast width has long received considerable attention from the breeders party to the exclusion of other important economic characters. Breast width can be changed genetically rather easily, hence is one of the cases where the genetics of the individual is relatively more important than the environment in determining the character.

There is a disturbing difference in the size of the sexes at marketing time. The sex difference is probably greater in turkeys than with any other farm animal. Experiments have shown that even this character is under genetic control, and that strains of turkeys could be developed in which the body weight of the hens and toms would be more nearly the same.

Plumage color is primarily under genetic control and environment has little if any influence. At the present, most breeders are interested in either white or bronze plumage and the difference is the result of only one pair of genes. White plumage is recessive to bronze so when the bronze and white are crossed, all of the offspring will be bronze. If these first-generation birds are mated among themselves, one-fourth of the progeny will be white and matings among these white birds will in the future produce only white birds.

In the breeding program at the University of Maryland, it has been consistently observed that the birds of certain families have tendencies toward leg weakness. Close attention to this factor should result in a strain better adapted to rearing in confinement. Meager evidence exists indicating that there are strain differences in the resistance to disease. Since there are known breed differences in temperament, it is within the realm of possibility that the behavior of turkeys might be improved. Admittedly, though, this would be a hard character to breed for as it would be very difficult to measure in an individual.

Without belittling the excellent work that has been done by the breeders in the past, it is apparent that much remains to strive for. To my mind, the place to start is with the improvement of the reproductive rate and with early growth rate.

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During the past several years Alex. C. Fergusson Company who manufactures and markets egg cleaner-sanitizer and water sanitizer chemicals in Maryland and other states, has voluntarily contributed money to the Maryland State Poultry Council for research on the use of their products.

At the present time extensive research is in progress in Maryland using these products but as yet no specific results have been obtained or reports completed.

Predatory Animals

By ROY GLOTFELTY

Predatory animals, foxes, owls, and raccoons especially, have caused considerable financial loss to many turkey producers in Garrett County.

A well constructed fence will control most predatory animals to some extent. Some growers have used an electric fence outside their regular fence to help keep foxes away. This fence consists of two strands of wire, one about five or six inches above the ground and the next one six or eight inches above that. Foxes made paths along this fence, but to this grower's knowledge they never entered the turkey lot.

Owls can be caught quite easily by placing a steel trap on top of a pole in or near the turkey lot.

The use of lanterns or lights, and tying of dogs near the roost have failed in some instances to keep all animals away. The presence of a man with the turkeys has failed in some instances also.

Trapping for some animals can be done successfully, but foxes must be trapped by an expert in that line. The Game Commission has a trapper hired for this purpose. Getting him seems to be the most logical answer to this problem. He is available anywhere in the State of Maryland. Get in touch with your local game officials and they should be able to obtain the services of this man for you.

Amateur trapping, especially in the case of foxes, is not advised. Your chances of catching a fox are very poor. About all you will do is make the animal trap shy and more difficult for the experienced trapper to catch.

Raccoons are much easier to catch than foxes. A simple baited trap will generally be all that is needed to make a catch.

Predatory animals generally cause the most trouble in the Spring and early Summer when they are rearing their young. All dead birds should be burned, buried, or otherwise disposed of.

Dead birds will attract some predatory animals much more quickly than live ones. This is especially true in the case of skunks or opposums.

Completely enclosed pole shelters or other means of confinement rearing is possibly the only sure means of controlling all predatory animals. Where this is not possible or practical, the grower will have to try to control to the best of his ability with one or more methods of control listed above.

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PERRY F. TWINING

Remember little George—he used to live down the road on the other side of the branch. Well, George isn't so little any more; he's a real comer and he has some chickens of his own now in a youth project. We can't ignore him any longer, he's too good not to have on our team.

The Maryland State Poultry Council, Inc., stands beside many other organizations which have joined in their support of 4-H Club work and Future Farmers Organizations in an effort to see that Maryland's young people have a chance to become aware of the importance of an active and responsible poultry industry.

Following are some of the achievements of young Marylanders in poultry during the past year.

Outstanding Poultry Projects

Each year one 4-H boy or girl is selected on the basis of outstanding work in poultry to represent Maryland at the National 4-H Club Congress which is being held in Chicago, Ill., November 28 through December 2. This is a reward earned by several years' of poultry work in 4-H Clubs. Mr. Arthur Breidenbaugh was selected this year on the basis of his project work with turkeys.

(Continued on Page 67)

Johnny Karhu, Elkton, Md., with one of his prize winning birds. *Left to right:* Mr. Allen Bradley, Easton, Md., Chairman, Jr. Broiler Contest Committee; Johnny Karhu; Mr. Allen Bryant, Assistant County Agricultural Agent, Cecil County.

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Governor Theodore R. McKeldin with a turkey presented to him on the Molly Martin television program over Baltimore Station WBAL-TV during the Midsummer Turkey Time to promote the sale of the tremendous crop of delicious Maryland turkeys.

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YOUTH . . . TOMORROW'S POULTRYMEN, LEADERS

Junior Broiler Production Projects

Johnny Karhu of Cecil County was the champion broiler grower of the State. Johnny competed against 162 other contestants and received top honors at the State finals held in College Park on September 15.

Johnny's birds averaged 4.10 at 10 weeks with a feed conversion of 2.37. Other winners were:

Name	County	Ave. Wt. at 10 wks. lbs.	Feed Conversion
Billy Kleinwachter,	Caroline	3.46	2.55
Richard Liebno,	Baltimore	4.00	2.40
Carroll Lee Paugh,	Garrett	3.00	3.60
Kit Bradley,	Talbot	3.37	2.68
John White,	Wicomico	3.65	2.21
Nancy Deputy,	Wicomico	3.60	2.69
Jerry Slider,	Allegany	3.87	1.98
Burkey Boggs,	Charles	3.10	2.49
Billy Boggs,	Charles	3.10	2.49

Contestants were scored on basis of their record books, their bird sample, and their knowledge of brooding practices.

4-H Poultry Production and Marketing Demonstrations—Maryland State Fair

Winner—Donald Davis, Wicomico County.

Runner-up—Billy and Burkey Boggs, Charles County.

These people represented Maryland at the Regional Contests at NEPPCO in Harrisburg, Pennsylvania.

4-H Poultry Foods Demonstrations Maryland State Fair

Winner—Katherine Banks, Wicomico County.

Runner-up—Team of Alice Harlan and Elizabeth Rahll, Harford County.

Katherine represented Maryland at the NEPPCO Exposition, October 5-7, Harrisburg, Pennsylvania.

4-H Egg Grading Contest — Maryland State Fair

1. Johnny Karhu, Cecil County.
2. Frank Hopkins, Wicomico County.
3. Frederick Burrier, Frederick County.
4. Austin Armicost, Baltimore County.

Johnny Karhu, Frank Hopkins, and Frederick Burrier (Alternate) represented Maryland at the Egg Grading Contest at NEPPCO Exposition, Harrisburg, Penna., on October 5, 1954.

4-H Poultry Judging Contest College Park, October 15, 1954

1. Mitchell Creek, Washington County.
2. Alfred Johnson, Montgomery County.
3. Harry Auth, Damascus, Montgomery County.
4. Homer Blubaugh, Allegany County.

These people will represent Maryland at the Northeastern Regional Contest in Boston in January, 1955.

FFA Poultry & Egg Judging Contest College Park, June 22, 1954

Name *County* *School*

1. Austin Armsacost, Baltimore, Hereford
2. Bradford Moore, Queen Anne's, Centreville
3. Forrest Jacobs, Garrett, Northern Garrett
4. George Kemp, Montgomery, Damascus

These are only a few of the many young people in Maryland who are trying to become a part of our industry. We owe them our active interest and help. The development of young leaders is a must if our industry is to prosper—these are tomorrow's poultrymen.

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Hemorrhagic

By G. LYNN ROMOSER
Department of Poultry Husbandry, University of Maryland

The term "Hemorrhagic Syndrome" has become, during the past few years, very non-specific in its meaning. In other words, what was originally thought to be a simple condition has now been found to be a highly complex one, indeed. Although many of the answers are still dependent on future research there are certain experimental results which will, no doubt, go a long way in eventually helping us solve this problem.

Two types of hemorrhagic syndrome are now recognized, each of which are discussed separately. One type manifests itself in the form of profuse internal hemorrhages as a result of very slight injuries to the bird. In conditions of this nature, the blood seems to lose its ability to clot normally after it is drawn from the bird. In fact, the blood drawn from some birds showing this form of the "Hemorrhagic Syndrome" has taken over 60 minutes to clot; whereas, the normal clotting time is considered to be from about 2 to 10 minutes. This condition can be produced in the laboratory by feeding the chicks a diet which has been formulated to contain extremely low levels of vitamin K. There are instances where this condition has appeared in flocks in the field and has been alleviated by the incorporation of Menadione (Vitamin K), Klottongen F. (water-soluble Vitamin K) or additional dehydrated alfalfa meal in the ration. Hence, this abnormality seems to be the result of a definite vitamin K deficiency. This may be brought about if the ration does not contain enough alfalfa meal, a natural source of the vitamin. Several other factors could explain the vitamin K deficiency in practical type rations, such as the use of certain solvent extracted soybean meals which contain extremely small amounts of the vitamins. In this type ration, there is, no doubt, an adequate amount of vitamin K but if in the event a stress factor is imposed on the birds, such as one or more disease outbreaks, the requirement may be increased and, hence, a vitamin K deficiency will exist. Workers at the West Virginia Station have been investigating the vitamin K requirements of growing chickens and find that a level of .36 milligrams per pound may be more desirable than at .18 milligrams per pound recommended by the National Research Council.

The antibiotics, coccidiostats and arsenicals now added to poultry rations, if fed at levels recommended by the manufacturer, should not interfere with the clotting properties of the blood, but at high levels, certain coccidiostats and arsenicals could serve to prevent this natural phenomena. Research has shown that antibiotics can be fed at extremely high levels with no apparent effect on the clotting time of the blood.

The second type of manifestation of the "Hemorrhagic Syndrome" is more complex in nature. Affected birds, especially those from 5 to 16 weeks of age show ruffled feathers, have pale S-shaped combs, and are generally pale in the areas of the body which should ordinarily be pigmented. In some cases, the birds are "down on their hocks" as a result of swollen joints and even areas of swelling are evident in the foot pads. Upon post-mortem examination, an enlarged proventriculus and hemorrhages in the small intestine, leg and thigh muscles and liver are sometimes, but not always, observed. The liver hemorrhages seem to originate from a "blister" which forms on that organ and then ruptures after the membrane becomes very thin. The bone marrow of these birds may be described as "fatty" and is very pale in color. The hemoglobin content and red blood cell counts of the blood from birds affected with this type of hemorrhagic condition are low in comparison with

(Continued on Page 71)

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(Continued on Page 71)

Miss Agnes Tilghman presenting the Tilghman Trophy which she donated in memory of her brother, Richard Tilghman, an outstanding pioneer in developing the Maryland Turkey Industry, to Mrs. Presley Taylor, Gambrills, Maryland, in recognition of her outstanding work during the past year in promoting the Maryland Turkey Industry as Secretar yof the Maryland Turkey Producers' Association.

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blood from normal birds but the clotting times does not always seem to be abnormally high. It is apparent, therefore, that this type of hemorrhagic condition presents a completely different picture than that of a mere deficiency of vitamin K. Recent findings at West Virginia indicate that this pathological state may be caused by a virus or rickettsia type of an organism.

The West Virginia workers took material from swollen joints of some infected birds and successfully infected normal birds by injecting them with the milky white fluid. They found the infectious material could be injected into the wing web, joints and foot pads or inoculated into the sinus, always with the same results. The symptoms appear from 3 to 7 days after injection. On the other hand, when normal birds are placed in direct contact with infected birds, it usually takes from 3 to 4 weeks before symptoms show up in the normal birds. The material can be injected into embryonating eggs and the embryos then become reddish or hemorrhagic. The spleens of the embryos are enlarged but the size of the livers is normal.

Many questions remain to be answered, among which are: Is it transmissible through the egg? What treatment is recommended? In regard to the first question only an indefinite maybe can be given since further research is necessary. Insofar as treatment is concerned, no positive recommendations may be made at this time. Penicillin or streptomycin has been found to protect embryos after inoculation. Moreover, preliminary results indicate that either terramycin or aureomycin at levels of about 200 grams per ton of feed may help the birds overcome the infection. The preventive use of the drugs before infection appears to be more effective than the curative use after the birds have been infected. Perhaps the near future holds in store the measures which may be taken to combat this perplexing problem.

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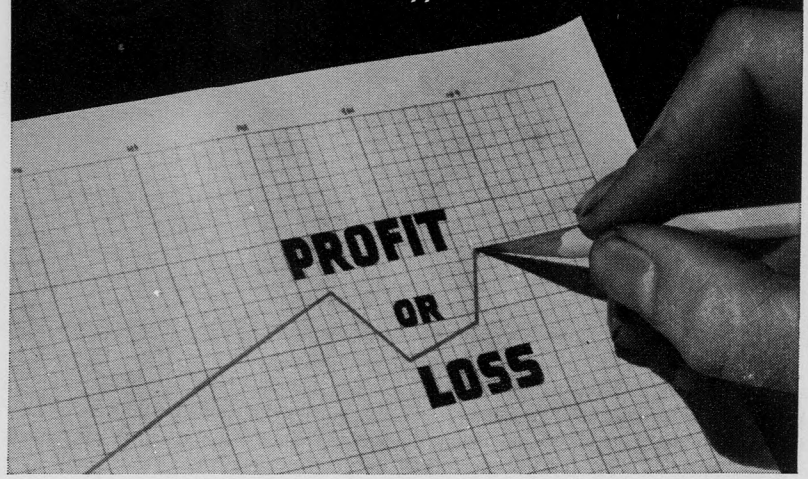

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Salmonellosis

By F. R. LUCAS, *V.M.D.*

Salmonellosis is the technical term applied to a related group of bacteria which have certain characteristics in common.

To most poultrymen Pullorum and Typhoid are readily recognized terms, while SALMONELLA is an unfamiliar word. Pullorum and Typhoid belong to the group of bacteria known as SALMONELLAE. Included in this same group are the PARATYPHOIDS and PARACOLONS.

The reduction of Salmonella pullorum infections through intensive testing over the past twenty years has reduced the incidence of this disease from twenty-one per cent in this state to about 0.2 per cent.

As the reduction of Pullorum disease continued, it was found that major losses were still occurring in chicks and poults, which on bacteriological examination revealed either the presence of fowl typhoid or paratyphoid.

Fowl typhoid has been a serious problem to poultry growers over the entire nation. In 1946, Moore, of the Delaware Agricultural Experimental Station, published paper Number 150, indicating that a nation-wide survey fowl typhoid was most prevalent in the Delmarva area.

The loss of a complete flock of layers is unquestionably costly when fowl typhoid strikes; at the same time, eggs sent to the hatchery from such a flock often involve thousands of dollars. Eggs already in the incubator, as well as chicks just hatching, can be contaminated by the disease which is readily spread by down from the chicks and to other eggs by contact with infected eggs.

Studies made by B. B. Orr and E. N. Moore of the University of Delaware on the length of time fowl typhoid bacteria survive on various materials and under various conditions revealed the following facts: fowl typhoid bacteria were alive 228 days on feed sacks (unsterilized), 49 days on plastic type window screening, 88 days in water at room temperature, 43 days in water that was alternately frozen and thawed daily, and 148 days at 20° centigrade in a liver removed from a hen that died of fowl typhoid. This data indicates the need for intensive sanitary measures to control and prevent the occurrence of fowl typhoid.

The paratyphoids comprise a group of bacteria closely related to pullorum and fowl typhoid. The relationship exists chiefly in the antigenic structure although the common factors in all Salmonellae are:

1. Egg transmission in all cases
2. Usually no visible symptoms in the adult bird. The exception is in fowl typhoid, in that the adult birds may die as well as the chicks
3. High loss in the chicks or poults during the first few weeks of life
4. Adult birds are carriers of the disease.

To date, over 150 types of paratyphoid have been isolated and over fifty of these have repeatedly been found to be serious pathogens to poultry, animals and man.

A list of the more common paratyphoids involving turkeys, that have been isolated by bacteriological methods, by the writer, involve twenty-four different types. Seven of these were in Group B, five in Group C, two in Group C2, three in Group D, three in Group E, two in Group E2, one each in Group E3 and G.

Salmonella paratyphoid infections create a more serious problem to the grower than pullorum or typhoid, due to the fact that in many instances the blood test using pullorum antigen will not reveal the reactors or affected

(Continued on Page 75)

Let's Don't Overlook This One Basic Fact In Poultry Raising

New Castle, Air Sac, Rot Gut are all new names of diseases of poultry and measures to correct these conditions are available.

Too often poultry raisers become too much interested in new diseases of poultry and they neglect to correct conditions that have a great deal to do with the inception of these very diseases.

Every year, thousands of baby chicks, broilers, pullets, layers and turkeys are received at our laboratories to be posted and their condition or disease analyzed.

Our veterinarians' and technicians' reports indicate that there is one VERY IMPORTANT thing poultry raisers are neglecting to do . . . that is, to take proper measures to control worm infestation.

Worms, particularly Large Round Worms, which are by far the most prevalent of all worms in poultry, weaken a bird's condition so that it is an easy prey for dsease.

It is a MUST, if poultry raisers are to be successful, that they control worms in their flocks. Neither you nor we as individuals can take care of all cases of worm infestation, but we can bring this condition to poultry raisers' attention so that they will take some action regarding worms in their flocks.

Years ago when the I. D. Russell Company was started, we recognized that worms were taking a heavy toll on poultry raisers' profits. In order that this heavy loss to poultry raisers might be eliminated, we developed our Large Round WormR Powder. Through the years we have continually made this product more efficient, until today, we believe we have the finest and most efficient worm powder on the market.

Our Large Round WormR Powder is more than just a wormer. It not only removes and controls large round worms in poultry, but it contains ingredients that promote digestion, stimulate the appetitie, and the production of red blood cells. Other ingredients check the growth of molds and aid in the control of mycosis and trichomoniasis.

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Russell's Large Round WormR Powder is very economical for poultry raisers to use and costs no more than other worm treatments that do not have added advantages supplied by our product. You can be sure that you will be doing your customers a favor by recommending this product to them.

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SALMONELLOSIS

birds. This is due to the variety of types and the antigenic structures involved. Salmonella pullorum has an antigenic structure of IX and XII. If a paratyphoid has a component of IX or XII it is likely to presume that reactors will be identified; however, if the components do not have IX or XII it is readily understood that no reaction will be seen when pullorum antigen is used for the test.

As a result, the problem resolves itself to:

1. Bacteriological examination of the chicks or poults when loss occurs.
2. Isolation of the paratyphoid involved.
3. Determination of the type involved, serologically, and then
4. Testing with an antigen prepared from the type isolated.

This procedure is also limited due to the inability to produce satisfactory O antigens from representatives of Group E (Salmonella anatum), Group F (Salmonella seftenberg) or further groups (Salmonella kentucky).

Promising results in eliminating paratyphoid to a great degree from turkey flocks have been attained in several western turkey producing states with the use of Salmonella typhimurium antigen.

Salmonella typhimurium antigen has components in its structure which might identify some of five out of the ten known groups of paratyphoids.

In one of these states, however, Salmonella typhimurium has failed to detect another group of the Salmonellas known as the Paracolon group of which Paracolon arizona is the most costly and lethal in poult mortality. Arizona paracolon was first identified in 1939 and reclassified as a separate group in 1945 by Kaufman. An interesting item brought out about Paracolon arizona was the fact that it is indigenous to a certain locale and although it has been isolated in a number of other states, it has, in some instances, been traced back to its origin and has only occurred in these other states by means of interstate shipment of hatching eggs.

The salmonellae are further peculiar in the respect that many of them are found in snakes, gila monsters, lizards and other reptiles. Transfer of the organism apparently occurs in poultry from these sources of infection.

This brief review of Salmonellae exclusive of Pullorum indicates that in all cases the disease is perpetuated through infected breeders by egg transmission, that in most cases the adult bird is not visibly affected, that in the majority of cases blood tests for Pullorum control cannot identify the affected bird or birds in the flock, that losses of chicks or poults in the early weeks of life require bacteriological examination to determine the cause of mortality, that losses due to Salmonellae are costly and wasteful.

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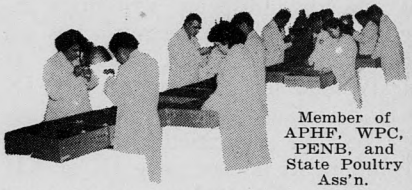

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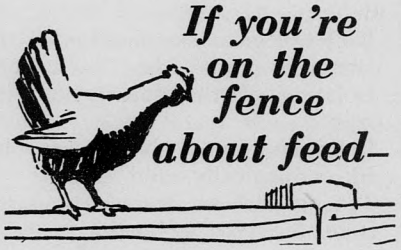

Talk to a Wayne man . . . the poultryman who feeds it year after year — the dealer who sells it to these steady Wayne users. Let them tell you why it always pays to feed Wayne.

WAYNE FEEDS

Plants serving Maryland:

Portsmouth, Virginia
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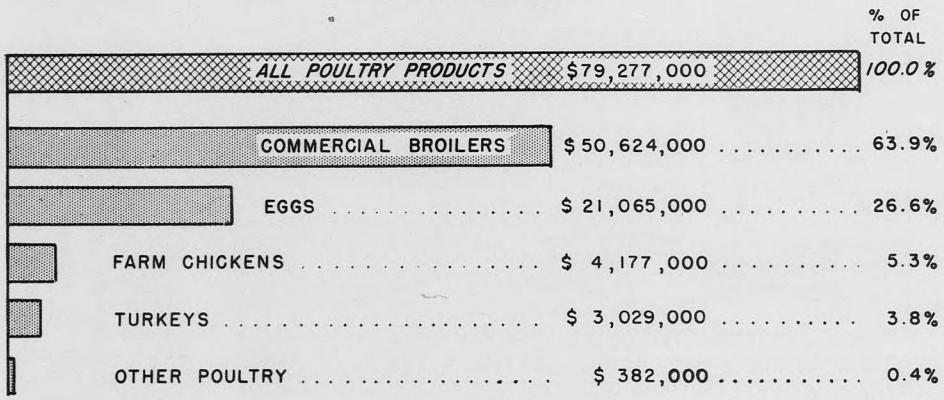
Service Offices:
Fort Wayne, Indiana

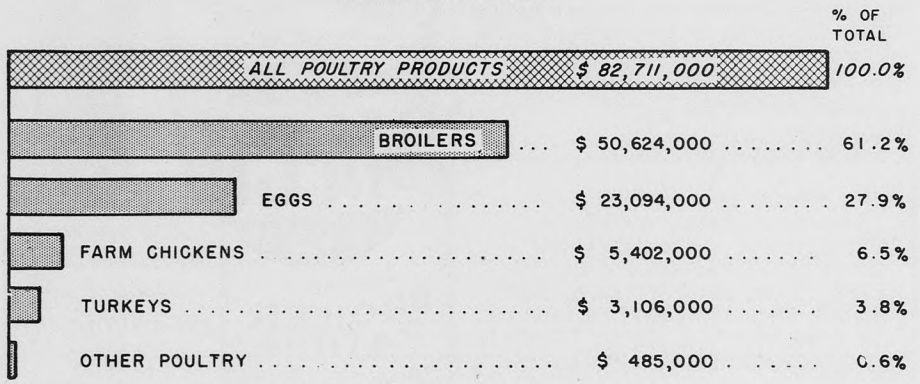
Statistics

CASH INCOME FROM POULTRY PRODUCTS
MARYLAND - 1953



SOURCE: *Crop Reporting Service, A.M.S., U.S.D.A.*

GROSS INCOME FROM POULTRY PRODUCTS
MARYLAND - 1953



Right from the MA-CO Feed Bag

By DR. L.N. GILMORE, *director of Research, Maritime Milling Co., Inc.*

THE MOST IMPORTANT FACTOR IN DETERMINING THE COST OF PRODUCING BROILERS IS THE DEGREE WITH WHICH YOUR BIRDS UTILIZE THEIR FEED. A LOW-PRICED FEED FREQUENTLY PROVES TO BE INEFFICIENTLY UTILIZED AND AS A RESULT, RAISES THE COST OF FEEDING!

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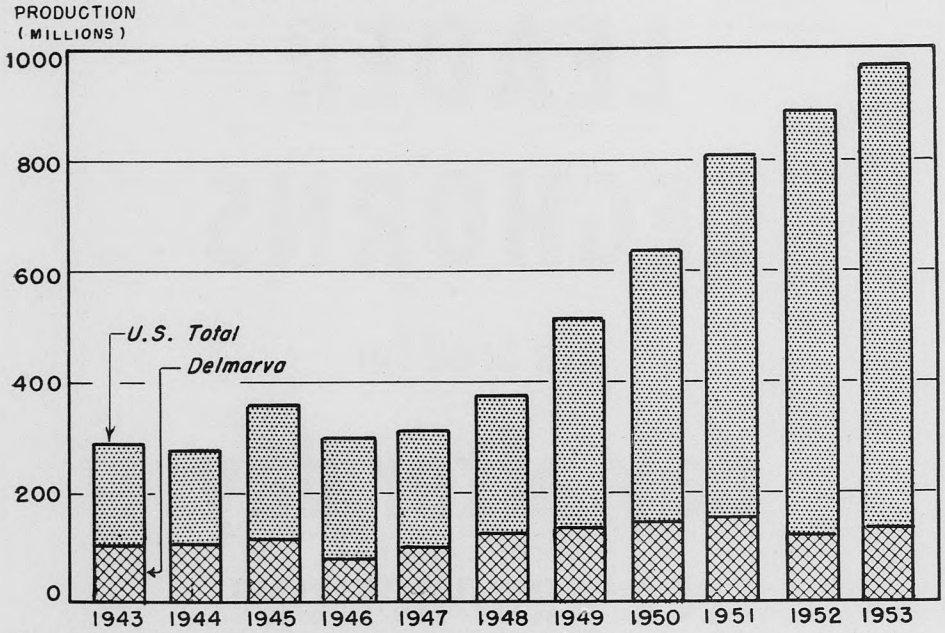
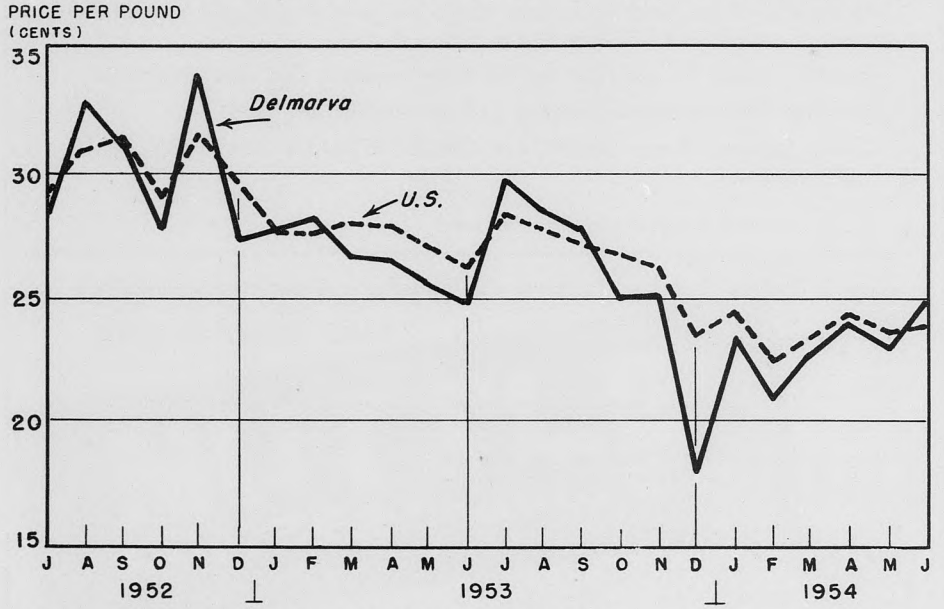
COMMERCIAL BROILER PRODUCTION
DELMARVA AREA COMPARED WITH U.S., 1943 THROUGH 1953



SOURCE: *Maryland Crop Reporting Service, A.M.S., U.S.D.A.*

MONTHLY AVERAGE BROILER PRICES RECEIVED BY GROWERS
DELMARVA AREA COMPARED WITH U.S., JULY 1952 THROUGH JUNE 1954



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All eggs used for hatching Leader chicks are produced by our own 24,000 breeders on our own 522-acre farms.

Breeders tested for pullorum by the plate method. No reactors found.

Breeding flocks in which progeny proven families are used.

Chicks hatched from LEGHORN CROSS STRAIN MATINGS THAT "nick" result in

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2. Large eggs
3. Pullets that lay standard size eggs soon after coming into production
4. Greater resistance to leucosis

Forty-four years under father-son management.

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GUY A. LEADER & SONS, Inc.

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FREE CATALOGUE!
Write for it.

MARYLAND CASH FARM INCOME — 1953
By Commodity Groups

Table 1 — Number of Layers and Egg Production by Months
United States 1953-1954 (to Sept. 1)

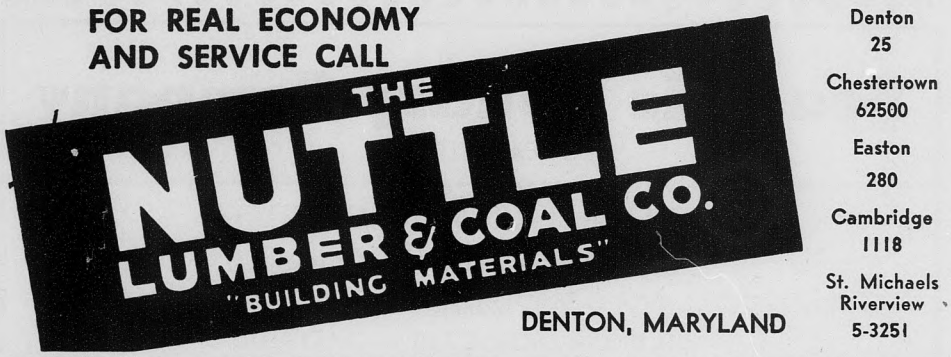
Month	Ave. No. layers on hand during month (Thousand)		Eggs Produced per 100 layers during month (No.)		Total Production Total Egg Production (Million Eggs)	
	1953[1]	1954[2]	1953[1]	1954[2]	1953[1]	1954[2]
January	374,131	382,215	1,448	1,425	5,416	5,448
February	362,778	371,840	1,462	1,473	5,304	5,476
March	349,724	359,459	1,793	1,837	6,272	6,605
April	334,861	343,452	1,812	1,826	6,068	6,271
May	318,325	327,552	1,836	1,853	5,846	6,071
June	303,099	313,495	1,660	1,675	5,032	5,251
July	292,784	304,878	1,579	1,563	4,624	4,766
August	294,631	313,618	1,469	1,449	4,329	4,545
September	319,808		1,310		4,190	
October	352,965		1,303		4,600	
November	375,150		1,275		4,784	
December	385,499		1,359		5,239	

[1]Revised.
[2]Preliminary.

Table 2 — Chickens and Eggs
Hens and Pullets, Rate of Lay and Egg Production
Maryland, 1943-1954

Year	Hens and Pullets on Farms Jan. 1 (Thousands)	Ave. No. of Layers on Hand during Year (Thousands)	Rate of Lay Per Hen and Pullet on Farms Jan. 1 (Numbers)	Rate of Lay Per Layer During Year (Number)	Eggs Produced During Year (Millions)
1943	4,002	3,070	111	144	443
1944	4,463	3,385	113	149	505
1945	4,149	3,227	118	152	490
1946	4,188	3,226	121	157	507
1947	3,975	3,193	126	157	500
1948	3,868	3,135	131	161	506
1949	3,686	3,068	140	168	516
1950	3,842	3,171	136	165	524
1951	3,670	3,147	142	166	522
1952	3,704	3,095	139	166	515
1953[1]	3,517	3,111	152	172	536
1954[1]	3,591	—	—	—	—

[1]Preliminary.



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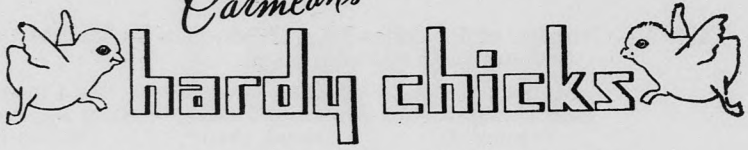

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Table 3 — Turkeys in Maryland

Year	All Turkeys Produced on Farms		Turkeys Consumed on Farms		Turkeys Sold	
	Number Thousands	Value 1,000 Dollars	Number Thousands	Value 1,000 Dollars	Number Thousands	Value 1,000 Dollars
1943	360	2,210	12	72	357	2,138
1944	423	2,749	10	67	402	2,682
1945	485	3,213	11	75	463	3,138
1946	462	3,550	12	90	462	3,460
1947	393	2,996	12	89	393	2,907
1948	318	3,057	13	124	308	2,933
1949	413	3,102	12	91	398	3,011
1950	435	3,220	13	98	416	3,122
1951	457	3,437	11	84	439	3,353
1952	526	3,194	15	90	518	3,104
1953[1]	489	3,106	12	77	474	3,029

Table 4 — Turkeys in Maryland

Year	Number (Thousands)	Value Per Head (Dollars)	Total Value (1000 Dollars)
1943	70	5.50	385
1944	61	6.10	372
1945	72	7.00	504
1946	83	6.90	573
1947	71	7.00	497
1948	59	8.00	472
1949	56	10.00	560
1950	59	7.00	413
1951	65	6.80	442
1952	72	7.50	540
1953	65	7.00	455
1954[1]	68	7.00	476

Table 5 — Commercial Broilers in Maryland

Year	Number Produced (Thousands)	Pounds Produced (Thousands)	Price Per Lb. (Cents)	Gross Income (Thousand Dollars)
1943	34,000	108,800	28.3	30,790
1944	30,000	96,000	27.6	26,496
1945	39,900	127,680	28.1	35,878
1946	31,122	99,590	30.1	29,977
1947	34,545	110,544	29.7	32,832
1948	38,345	122,704	34.7	42,578
1949	48,315	149,776	27.0	40,440
1950	54,596	163,788	26.0	42,585
1951	60,602	181,806	27.1	42,269
1952	59,966	176,595	28.2	49,800
1953[1]	62,093	192,488	26.3	50,624

MAGEE HARDWARE & SERVICE
Phone 35 — U. S. 50 — North Berlin
WATER SYSTEMS — WELLS DRIVEN — PIPE — FITTINGS
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RESEARCH IS A MUST

Esham's takes pride in offering you tried and proven birds. All breeds are grown on rigid tests and have to prove to us that they are the bird that is going to make you, the grower, the most money.

APPROVED — PULLORUM CLEAN

PARSONSBURG, MD. **Tel. Willards 2072**

BIRDS EYE DIVISION

POCOMOKE CITY, MD.

General Foods Corporation

Table 6 — Delmarva Broiler Placements and Marketings

	Placement	Marketings	Placement	Marketings
		1953[1]		1954[2]
January	14,854	11,016	11,939	9,756
February	11,248	10,244	11,187	9,942
March	13,355	12,557	12,614	11,240
April	13,609	12,840	13,570	10,061
May	12,819	13,375	11,775	13,065
June	12,126	14,062	11,960	11,631
July	12,349	12,549	13,265	12,555
August	10,777	11,913	11,311	11,935
September	11,002	11,006		
October	12,071	10,557		
November	12,618	9,441		
December	12,648	9,044		
Total for Year		138,204		

[1]Revised.
[2]Preliminary.

Table 7 — Total Production — Eggs & Poultry Meat U. S.

Year	Eggs Million Dozen	Million Lbs. — Dressed Wt. Farm Chickens	Commercial Broilers	Turkeys	% of Total Poultry Meats* Farm Chickens	Commercial Broilers	Turkeys
1943	5,000	3,402	733	452	74	16	10
1944	5,366	3,183	720	535	72	16	12
1945	5,154	3,180	974	662	66	20	14
1946	5,130	2,861	778	684	66	18	16
1947	5,077	2,655	824	588	65	20	15
1948	5,032	2,296	992	510	61	26	13
1949	5,148	2,448	1,382	591	56	31	13
1950	5,384	2,355	1,726	736	49	36	15
1951	5,433	2,406	2,192	839	44	41	15
1952	5,590	2,302	2,402	925	41	43	16
1953	5,656	2,216	2,685	884[1]	39	46	15

*Excluding ducks, geese, guineas, etc.
[1]Preliminary

Table 8 — U. S. Per Capita Consumption of Poultry Products and Red Meats

Year	Eggs Number	Lbs. Dressed Wt. Commercial Broilers	Farm Chickens	Turkeys	Total Lbs. Poultry Meat	Total Lbs. Red Meats
1943	342	5.5	24.8	3.3	33.6	144.9
1944	350	4.8	22.0	3.2	30.0	152.2
1945	397	6.6	21.9	4.2	32.7	143.2
1946	374	5.4	20.1	4.5	30.0	152.1
1947	378	5.6	17.7	4.3	27.6	153.1
1948	384	6.9	16.1	3.6	26.6	143.4
1949	378	9.0	15.9	4.0	28.9	142.6
1950	383	11.1	15.3	4.8	31.2	142.4
1951	394	13.8	15.0	5.2	34.0	135.8
1952	407	15.1	14.6	5.4	35.1	144.0
1953	400	16.4	13.5	5.3	35.2	153.6
1954*	412			5.4	36.2	154.0

*Preliminary Estimates.

Southern States
Energized* Poultry Feeds
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STARTING & GROWING MASH—Complete chick-to-layer mash. 20% protein. Vitamins, minerals including Vitamin B12 and antibiotics. Builds large, healthy, high producing birds.
GROWING MASH—For birds on range from 10 - 12 weeks until they start to lay. Cuts feeding costs by utilizing vitamins, minerals on pasture. 17½% protein.

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SUPER LAYING MASH—For layers indoors. 20% protein, extra Vitamin D. Balanced formula rich in Vitamin B12, minerals. Builds strong bones, good shell texture. Keeps egg production high.

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ALL MASH LAYING RATION—For commercial egg production. Complete high energy feed for automatic feeders. Simplifies feeding, saves labor. Keeps hens from getting too fat.

ALL MASH BREEDING RATION—Complete feed for commercial breeding flocks. Increases egg production, steps up hatchability, builds stronger chicks.

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BROILER-MAKER—22% protein, complete start-to-finish feed enriched with Vitamin B12, antibiotics. Grows plump birds with thick, sturdy legs. Produces fast growth, excellent color, full finish.

BROILER-MAKER FINISHER—Special 17% protein finishing feed with all nutrients needed for fast growth after 7 weeks. Cuts feeding costs. Extremely high in energy.

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MARYLAND

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